

Pesticide Exports Show 18% Gain in First Half of 1955

Year's Total May
Exceed \$80 Million,
BDSA Report Says

WASHINGTON—U.S. exports of pesticides in the first half of 1955 totaled 167,110,000 lb. compared with 141,084,000 lb. in the like period of 1954, an 18% increase in quantity and a 34% increase in value, the Business and Defense Services Administration reports.

Current trends indicate that this year's exports may exceed \$80 million.

Individual commodities increased in value as follows: BHC, 87%; calcium arsenate, 60%; DDT—25% and on 100% basis—58%; lead arsenate, 45%; miscellaneous agricultural

(Continued on page 8)

Chemico to Design Nitrogen Plant for Japanese Firm

NEW YORK—Chemical Construction Co. has been named to design a nitrogenous fertilizer plant for Nihon Kagaku Kogyo, Tokyo, Japan. The urea and ammonia plant will be located at Niigata, Japan. Capacity will be 90 short tons of urea per 24 hour day, using the Chemico recycle urea process, and 120 short tons of ammonia per 24 hour day. Output is expected to begin in the time next year. Engineering has already been started by Chemical Construction Co. Construction of the new plant will be completed by the Japanese. Cost of the facilities was not disclosed.

Johns-Manville to Produce Synthetic Calcium Silicates

— See Picture on Page 8 —

NEW YORK—Plans for large scale production of a new line of synthetic calcium silicates were announced by the Celite division of Johns-Manville Corp. here Oct. 13 at a press luncheon.

Included in the plans is a new plant costing several million dollars, now under construction at Lompoc, Cal., site of Johns-Manville's Celite plant and diatomaceous silica deposits. Full production is expected to begin early in 1956. Capacity will be about 14,000 tons annually.

The product has been proven as an absorbent-grinding aid for high liquid concentrate insecticide wettable powders and as an anti-caking agent in fertilizers, insecticide dusts, cleansers and detergents, the firm said. Among the high concentrate wettable powders held commercially practical were 70% Toxaphene, 15% Aramite, 75% DDT, 50% Heptachlor and 75% Dieldrin. Examples of dry dust concentrates were listed as 70% Toxaphene, 50% Aramite and 50% Heptachlor.

Johns-Manville will use the hydrothermal process in manufacturing

(Continued on page 17)

Inside You'll Find

Insect Notes	4
Over the Counter	9
Field Notes	9
What's New	10
Oscar & Pat	12
Farm Service Data	13
World Report	18
Editorials	22
Meeting Memos	23
Index of Advertisers	23

Role of Safety in Improving Human Relations Stressed at Fertilizer Section Meeting

By LAWRENCE A. LONG
Editor of Croplife

CHICAGO—That safety is one of the best means for improving human relations in the fertilizer industry was emphasized at the annual meeting of the Fertilizer Section of the National Safety Council held at the LaSalle Hotel here, Oct. 17-18. The group elected new officers, listened to a seven-man panel of safety experts, and heard a preliminary report on the group's employee motivation study project. Max W. Foresman, director of public and plant relations of Spencer Chemical Co., Kansas City, Mo., told the group in his talk on Oct. 17, that the fertilizer industry has much to gain through an emphasis on safety, and that in the final analysis, safety is human relations.

In developing his theme, Mr. Foresman declared that safety experts by themselves cannot create safety, because safety is the creation of each individual on the job. It therefore behooves those responsible for the promotion of safety in various plants, to gain a broader perspective of the

work to be done. We need, he said, to understand men as well as we understand machinery.

He declared that safety and human relations are not really two separate and distinct entities, but

(Continued on page 20)

Control Officials Get Reports on Labeling Change, Model Law

By PAUL L. DITTEMORE
Croplife Editorial Staff

WASHINGTON—A combination of tradition, apathy and the rigidity of state regulations and statutes appears to be holding back progress in solving some of the perennial problems of the Association of American Fertilizer Control Officials, members of the group were told at the ninth annual convention at the Shoreham Hotel here Oct. 14.

The convention, drawing a record attendance of 171 as compared with 150 last year, was presided over by Russell W. Ludwick of State College, N.M., who has served as president for the past year.

M. P. Etheredge, State College, Miss., was elevated to the presidency succeeding Mr. Ludwick and J. D. Patterson, Salem, Ore., was elected to succeed Mr. Etheredge as vice president.

Pesticide Officials Hear Plea for Safe Practice Campaign

WASHINGTON—Hazards connected with the use of poisonous chemicals in controlling pests received the attention of two speakers at the annual meeting of the Association of American Pesticide Control Officials, held at the Shoreham Hotel here Oct. 15.

C. O. Barnard, executive secretary of the Western Agricultural Chemicals Assn., described safety as "the problem child of the pesticides industry," and Dr. B. E. Conley, secretary of the Committee on Pesticides of the American Medical Assn., said that the greatly expanded use of pesticides has caused his association to set up information centers for proper treatment of poisonings resulting from pesticides. He said that this type of hazard is no longer restricted to agricultural or industrial personnel.

The meeting of the pesticide control officials followed similar meetings of the American Association of Feed Control Officials and the Association of Fertilizer Control Officials, all of which were held at the Shoreham Hotel earlier in the week.

Clyde A. Bower, Oklahoma City, vice president for the past year, was elected president, succeeding Ernest A. Epps, Jr., Baton Rouge, La. The newly elected vice president is Harry J. Fisher, New Haven, Conn.

(Continued on page 8)

RECORD COTTON YIELD

WASHINGTON—The U.S. Department of Agriculture's cotton report indicates an acre-yield of 405 lb., 64 lb. above the previous record, set last year. Yields above previous highs are forecast for Georgia, Tennessee, Alabama, Mississippi, Arkansas and Louisiana.

Davison to Build Liquid Fertilizer Plant in Indiana

BALTIMORE—The Davison Chemical Co. Division of W. R. Grace & Co., will build a plant for manufacture of liquid fertilizers on an eight-acre site in Wakarusa, Ind., 18 miles southeast of South Bend.

The plant will have 15 tons an hour capacity, and the area to be served takes in parts of both Indiana and Michigan. It will mark Davison's entry into the liquid fertilizer field.

When the plant goes into operation, about March, 1956, it will turn out fertilizer in analyses of 9-9-9, 5-10-10 and 10-5-5. In addition to these liquid products, a warehouse stock, supplied from other Davison plants, will be maintained of DAVCO granulated fertilizer in bulk and in bags.

(Continued on page 8)

AT CONVENTION, TRADE SHOW

National Nitrogen Solutions Group Faces Industry Problems With Confidence in Future

By LAWRENCE A. LONG
Editor of Croplife

SPRINGFIELD, ILL.—Discussions of problems facing the nitrogen solutions segment of the fertilizer industry, plus a huge display of application equipment and supplies were featured at the fall convention and trade show of the National Nitrogen Solutions Assn. here Oct. 13-14.

Speakers representing agricultural colleges, farm publications and the industry itself were included on the program which was held at the Illinois State Armory.

In a discourse on "Crop Residues and Rotations as they Influence the Need for Nitrogen Fertilizers," Dr. E. H. Tyner of the University of Illinois department of agronomy told the group that the application of commercial nitrogen is now less expensive than depending upon a nitrogen supply derived solely from legumes.

He declared that it is now possible to maintain a continuous corn culture, since science and industry have teamed up to minimize the two major obstacles which formerly prevented such, namely, soil insects and a shortage of nitrogen. However, a third obstacle, that of possible surplus of feed grains, has not been solved, he said.

Dr. Tyner pointed out that although farmers often give the impression that they follow systematic rotation of crops, many do not do this in actual practice. He termed them "production opportunists" who keep their eyes on their pocketbooks as well as on their fields. "If demand and price prospects are favorable, they may increase the acreage of one or more crops at the expense of less favored crops," he observed.

The Illinois soils expert reviewed the factors affecting the speed of decay of plowed-under stalks, in relation to their supplying nitrogen to growing crops. When mature non-leguminous residues are incorporated into the soil, they do not contain sufficient amounts of nitrogen to satisfy the nitrogen growth-demands needed by microbes for rapid decay. Competition for available soil nitrogen supplies therefore arises between the microbes and the growing crop, and such competition may continue for an entire growing season. "For non-legume crops such as corn, this competition may give rise temporarily to decreased yields," he said.

In the case of plowing under legumes, no nitrogen is needed to assure rapid decomposition of such residues. "If nitrogen is applied for corn following a legume, it is only because the legume has not added sufficient nitrogen to the soil to assure maximum corn yields," he said. This might be the case where hay removals or excessive grazing may have depleted the amounts turned under.

By the use of blackboard illustrations, Dr. Tyner drew graphs to show how the soil nitrogen level fluctuates from year to year following rotations of leguminous and non-leguminous crops. He pictured a lower line as the "floor," or minimum amounts of nitrogen, and the peaks, indicating the presence of the element in larger amounts.

The floor, he said, can be expected to vary with the organic matter content of soils, the activity of decay of organic matter and the residual legume nitrogen effects. There will be no peak if the legume is not sown or if it fails to grow to maturity.

The height to which nitrogen availability extends following a legume

will vary, of course. In cases where mixtures of legumes and grass sods are turned under, or legumes mixed with straw, double peaks may be obtained, with the higher occurring the second year, it was pointed out.

Multiple nitrogen fertility peaks with maximum nitrogen fertility occurring in the second year are not uncommon for some rotations. This can come about when there is delay in the decaying process during the first year, which allows the release of extra amounts of nitrogen when needed during the second season.

Drouth is another factor which may increase the adequacy of the nitrogen fertility peak of otherwise inadequate rotations or induce secondary peaks in nitrogen fertility, Dr. Tyner said. Low crop yields coupled with lack of leaching may result in the accumulation and carry-over of available nitrogen, thus creating higher nitrogen fertility in the year following drouths. These are all factors which must be considered in making nitrogen recommendations.

A panel comprising dealers and distributors of nitrogen solutions in widely-separated parts of the country, brought out the fact that no particular pattern of operation has yet been established in the trade. Whereas some dealers indicated their success is due to a lively custom setup, others were just as "sold" on renting equipment to farmers who applied the material themselves.

Moderator of the panel was Byron Jacobs, Schelm Bros. Mfg. Co., E. Peoria, Ill. Taking part in the panel discussions and answering questions put to them from the audience, were Rod L. Maxwell, GLF, Ithaca, N.Y.; Don Foster, Ottawa, Ohio, dealer; C. L. Taylor, field service manager, Michigan Bean Co., Saginaw, Mich.; Earl Langfitt, Bethany, Mo.; William Seigel, J. R. Jergen Co., Morrill, Neb.; Don Fletcher, Pacific Supply Cooperative, Portland, Ore., and A. J. Schuler, Welcome, Minn.

Mr. Foster reported that he serves an area where general crops, plus truck crops, are grown. He said that although his firm offers the farmer a "do it yourself" opportunity, the firm makes more revenue from custom application. His company has been in the solution business for the past four years, he said, and volume has grown steadily in that time.

"We are pleased with the program and with the reception we have had from the farmers in our area," he declared. At first, the lack of application equipment was a severe handicap, but this has now been corrected and with high quality nitrogen products, available, he expressed confidence that a "great potential" lies ahead.

Mr. Maxwell reported that in the northeastern part of the U.S. where his sales are made, farmers are "catching on" rapidly to the solution method of fertilization. "We help the farmers to help themselves," Mr. Maxwell declared, emphasizing the educational approach to the problem. This program is expected to pay off, he added.

Relatively new in the business, Mr. Taylor said that farmer acceptance of nitrogen solutions is high and that the firm is now considering an expansion program. Having been for years in close association with the farmers in central Michigan through the firm's primary work in soybeans, the customers were already well acquainted with the company and it was thus relatively easy to add nitro-



AT NITROGEN SOLUTIONS ASSN. MEETING—Shown above are scenes at the fall convention and trade show of the National Nitrogen Solutions Assn. meeting, held Oct. 13-14 at Springfield, Ill.

Directors of the group are shown in the top photo. In the back row, left to right, are: E. E. Crouse, Liberty, Ind.; A. J. Schuler, Welcome, Minn.; R. L. Wooley, Bayport, Mich.; W. N. Senescac, Fowler, Ind.; William Spargur, West Des Moines, Iowa; Don Fletcher, Portland, Ore., and Roy Broyhill, Dakota City, Neb. In the front row are: Harold Schelm, East Peoria, Ill.; John White, Auburn, Neb., secretary; Wayne R. Johnson, Shenandoah, Iowa, president; Dick Cecil, Dayton, Ohio, vice president, and Don Foster, Ottawa, Ohio. Absent when the photo was taken were George Serviss, Ithaca, N.Y., treasurer, and B. B. Woodward, Rocky Mount, N.C.

In the center photo, members of a panel discuss marketing problems. Panel members are: William Seigel, Morrill, Neb.; R. L. Maxwell, Ithaca, N.Y. (speaking); C. L. Taylor, Saginaw, Mich.; Earl Langfitt, Bethany, Mo.; Don Fletcher, Portland, Ore.; A. J. Schuler, Welcome, Minn., and Don Foster, Ottawa, Ohio. Standing behind the panel is Byron Jacobs, West Peoria, Ill., moderator. The panel members presented introductory talks describing their own business operations, then discussed for nearly an hour, questions from the floor.

The lower photo shows a balcony-eye view of Illinois State Armory exhibition with scores of tanks, booms, valves, connections, meters, pumps, controls, gauges and nozzles on exhibition.

gen to its services, he said.

Mr. Taylor said that over the years, the company has maintained a good system of public relations and advertising which makes it easy for farmers to accept recommendations and not to resist the introduction of this type of fertilization.

Mr. Fletcher outlined the growth of his company's operation on the Pacific Coast. Its first method was to operate out of a railroad tank car, but now two distribution points are maintained to serve different outlets. The firm's dealers buy their own applicators, he said, and solutions are sold on an f.o.b. plant basis.

The system under which application rigs are rented may make or break a firm, he observed. As a rule of thumb, those who charge no rental, have a difficult time to survive. His company makes a per acre charge.

The cooperative, Mr. Fletcher pointed, is a wholesale firm dealing in fertilizers, pesticides, farm machinery, seeds and many other items. The addition of nitrogen solutions has not resulted in the establishment of a new department, is merely dovetailed into the regular operation.

Mr. Langfitt's firm, operating out of Bethany, Mo., serves parts of Missouri and Iowa. Not only nitrogen solutions are sold, he said, but the other two fertilizer elements, business since March, 1954, the company custom-applies most of material. There is thus far no farmer-owned equipment in the trade area. Mr. Langfitt indicated, however, that eventually the company expects to get away from the custom operation to a "do it yourself" system.

A report on a large-volume business was furnished by A. J. Schuler.

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Controlling rent... occupied some... brought out that... certain amount... even applicator to... keep it working... -Cooperation

welcome, Minn. He said that the business began seven years ago as a mixing plant, but a year later, began the business of direct application of solutions. He reminisced somewhat on the hardships endured in those early days when it was necessary to improvise one's own application equipment, but added that this picture has changed completely now.

Mr. Schuler said that his firm is applying nitrogen solution to 75,000 acres on a "do it yourself" basis. It handles some five carloads of material a day, and at one time he had a total of 106 applicators on hand. Dealers play an important role in the Schuler operation, he reported, with some 95% of the material being handled through this group.

Sales are based on a tonnage basis and the Schuler firm allows a discount for payment in 10 days. He emphasized that these charges are not on an acreage basis.

Mr. Seigel, in describing his western Nebraska operation, explained that grasslands play an important part in the economy of the rather large area he serves. Although his firm began selling nitrogen solutions only last year, he said, responses to application have been "terrific." He told of big increases in the protein content of wheat and other crops.

As to financing, he said that in his experience, the bankers can handle the situation better than anyone else and this is working out all right. His company does little of the "do it yourself" type of business, because the farmers are too busy to add this chore to their other duties, he said.

The firm advertises thoroughly in the area, but according to Mr. Seigel, nothing can beat personal solicitation on farmers.

A question-and-answer session followed, bringing out additional information on the ground already covered, plus new topics. In a question regarding the value of soil tests, Mr. Taylor termed them the "backbone" of recommendations. Still, he said, a soil test does not necessarily tell the whole story. Other factors to be considered include the soil type, the rotation being followed, drainage of the field and its crop history.

Mr. Maxwell said that his company enjoys good relations with the state experiment station and vo-ag schools, thus being able to gain further information along this line.

Mr. Foster added that his firm works together with the local crop improvement association, cooperates in the county field day and takes part in other activities. "It all boils down to making more contact with the farmer to gain more sales," he said.

Drouth has been a retarding factor in the area where Mr. Langfitt operates, he reported. He said that because of this, credit is becoming a serious problem and has hurt sales. Collections, on the other hand, have been good, he said.

The average farmer is not able to make heavy investments in fertility, even though he may be sold on the idea.

Panel members were asked how they handle solutions. They said that they purchase N at 41%, then dilute to 37% to keep vapor pressure to a minimum. Amounts of water are calculated either through a meter or by weighing.

Another discussion centered around the relative values of pumps vs. gravity and pressure sprays. No conclusions of superiority were reached, however.

Controlling rentals of equipment occupied some attention. It was brought out that the owner should do certain amounts of work for a given applicator to do and then try to keep it working as much as possible.

Cooperation on the part of

renters is required to get maximum value from the equipment.

Insurance was the subject of a considerable discussion in which a number of the panel members took part. It was brought out that liability insurance is a must in the business, but rates, Mr. Taylor reminded, are less than those for anhydrous ammonia where more pressure is involved.

One way to cut down on the possibility of accidents is to give the farmer very thorough instructions on things to do and things to avoid. If this detail is overlooked, serious trouble can result.

The annual banquet was held the evening of Oct. 13, with Merrill Langfitt, radio farm director of station KMA, Shenandoah, Iowa, as master of ceremonies. Speaker of the evening was Paul Johnson, editor of "The Prairie Farmer," who told the group that "within our lifetimes, we will realize the need for the higher yields and surpluses which now pose a problem."

He lauded the fertilizer industry, citing nitrogen specifically as being "exciting." Mr. Johnson cautioned the solutions people to "proceed with care and build well." A number of factors are favorable to the development of the nitrogen industry, he said. These include the fact that most farms are under-fertilized, thus offering a great potential for sales.

Another favorable factor, Mr. Johnson said, is that nitrogen pays "sensationally," and is cheaper to buy commercially than to raise via legumes. This constitutes a real revolution, he said.

The fact that farmers have a fondness for doing things the easiest way will be a help selling nitrogen solutions, he said. This is also in line with the modern farmer's ability to adapt himself to new ideas; thus choosing the path to more efficiency.

As a safeguard against reducing confidence in the product, it is always best to be modest in advertising claims, Mr. Johnson declared. "Don't exaggerate the powers of the product," he urged. "Stick close to the facts . . . otherwise, the buyer's confidence in nitrogen may be destroyed."

Mr. Johnson said that although the colleges sometimes are slow in coming through with needed information, still their objective work acts as a balance. He said that the colleges should be regarded as a sort of "conscience." "We may not like what they say, but we'd better listen," he asserted. "Stay close to research and be skeptical of the easy

and simple explanation of anything."

The final program was held on Oct. 14, with George Serviss as chairman.

William R. Bone, Monsanto Chemical Co., St. Louis, outlined a number of opportunities open to the nitrogen solution industry and also offered three guides to better sales and more profitable operations through mixed liquid fertilizers.

The year 1955, he predicted, will be remembered as the time when complete liquid fertilizers rose from relative obscurity to prominence. "This is a remarkable advancement in the face of farm price declines and a semi-stagnant fertilizer market," he said.

Mr. Bone declared that agriculture faces a tremendous opportunity through the development of fertilizer technology. The farmer, the custom operator, the dealer and the manufacturer all stand to benefit from the forward movement.

Farmers like the ease of application, plus the efficiency of complete solutions, he said, particularly when this results in bigger yields and lower unit costs.

For the custom operator, the introduction of complete solutions makes possible faster application with 40 ft. booms, thus opening the way to greater volume and more profit, he said. The speaker covered the problems of corrosion in tanks, indicating that these difficulties are fast being overcome through the introduction of plastics, and rubber liners, as well as of metals that resist the action of chemicals.

Dealers stand to gain through selling complete fertilizer solutions because of the possible high volume of materials they can handle and the efficient means of distributing the liquids, he said. By offering a complete service, they can capture more of the farmer's business.

Manufacturers, obviously, will prosper as volume increases and acceptance of this type of product becomes more widespread.

In presenting three guides to the trade, Mr. Bone urged his listeners to measure their market—that is, to figure closely as possible the volume of business one might expect to do in the area of operation, to whom the material will go and the margin of profit reasonably expected.

"This is one of the few businesses where the dealer may become a manufacturer," Mr. Bone observed. However, he added, if a good manufacturer is already located within the area, it would undoubtedly be less

OFFICERS NAMED

SPRINGFIELD, ILL. — The National Nitrogen Solutions Assn., at its meeting here Oct. 13-14, elected four new directors and reelected its officers. Added to the board were W. N. Senescac, Fowler, Ind.; Don Fletcher, Portland, Ore.; R. L. Wooley, Bayport, Mich., and William Parrish, Auburn, Ill. Reelected officers are Wayne Johnson, Shenandoah, Iowa, president; Richard Cecil, Dayton, Ohio, vice president; George Serviss, Ithaca, N.Y., treasurer, and John White, Auburn, Neb., secretary.

expensive to buy from him than for the dealer to mix the goods.

As another guidepost, Mr. Bone reminded the group that a number of reputable engineering firms are available to help with technical problems involved in making or handling complete liquid fertilizer materials. He affirmed that they can be of considerable help in enabling the dealer-manufacturer to avoid costly errors.

Howard Lathrope, Nitrogen Division of Allied Chemical & Dye Corp., told the group that "solutions have come a long way in five years," but predicted still greater achievements in the years to come.

"The coming of nitrogen to the Middle West may be as great an event as the introduction of electrical power or the establishment of railroads," he declared.

He said that the fertilizer industry should be thanked for introducing more efficiency to farming rather than be criticized for whatever part it may play in the surpluses. He said he wouldn't be surprised if such talk against the fertilizer industry is "Communist inspired."

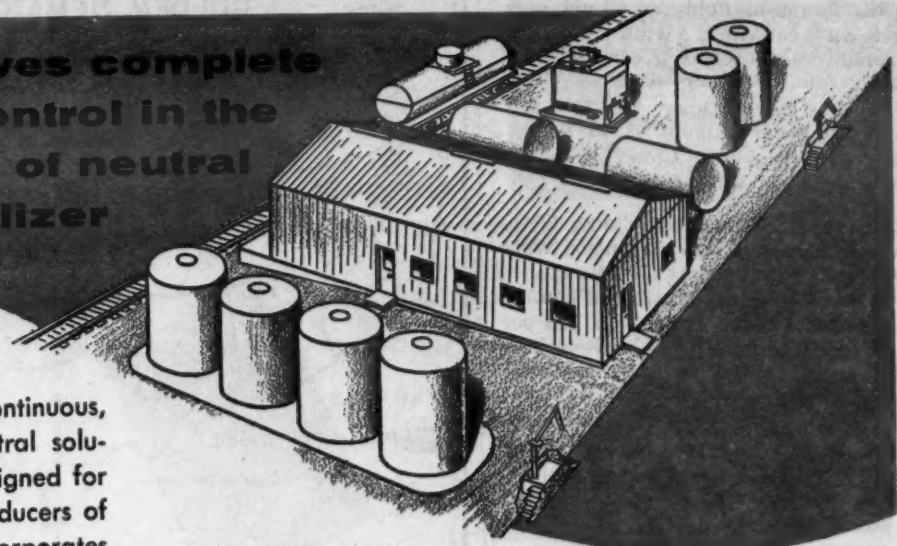
That the nitrogen solution business is a new one was demonstrated by Mr. Lathrope who asked for a show of hands of those who had been in the business for five years or longer. Of the group of perhaps 150 to 200, only three individuals indicated they had had five years' experience.

A tremendous selling job remains to be done, Mr. Lathrope declared. Even though a wonderful product is being offered, "the farmers aren't going to come and take it away from you," he warned. It will require a high degree of salesmanship to attain the volume the industry should enjoy.

Mr. Lathrope declared that no longer is it economical for a farmer to grow his own nitrogen through

(Continued on page 18)

This plant gives complete automatic control in the manufacture of neutral solution fertilizer



This is a complete, continuous, automatic control, neutral solution fertilizer plant designed for new or established producers of liquid fertilizers. It incorporates an aqua ammonia converter which is Carlile designed and built for 99%+ efficiency.

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capacity is 10 to 15 tons per hour; however, we can build you a plant in any capacity you desire, smaller or larger. Produce any desired formula continuously or batch: ammonium phosphate and complete fertilizer solutions.

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INSECT, PLANT DISEASE NOTES

Serious Hopper Areas Spotted in California

SACRAMENTO — The fall grasshopper survey conducted by the California Department of Agriculture in cooperation with county agricultural commissioners has disclosed areas in which serious grasshopper trouble may be expected in 1956.

Two of the areas are in Humboldt County and are rated by Martin M. Poyner, state grasshopper expert, as severe to very severe with respect to probable grasshopper infestation next year. The areas are located a few miles south of Ferndale and a few miles north of the Hoopa Indian Reservation. The grasshoppers average between 35 and 40 per square yard.

Tehama County has one area rated as severe. It is southwest of Red Bluff where the pests averaged 36 per square yard at the time of the survey.

Other counties with areas where damage may occur include Butte, Kern, Kings, Riverside, San Diego, San Luis Obispo and Shasta, according to Mr. Poyner.

Under normal conditions, Mr. Poyner said, the anticipated areas of infestation next year can be expected to be ten times greater than the area found at the time of the survey. During the winter months another survey is made to determine if predators, especially blister beetle larvae, are attacking the eggs. In the spring a grasshopper nymph survey is made to determine the number of grasshoppers hatched. After 90% of the eggs have hatched, control measures are started.

Corn, Alfalfa Pests Reported in Kansas

MANHATTAN, KANSAS — The European corn borer fall abundance survey continued in northern Kansas the week of Oct. 8-14. Average percent of stalks infested was 1.7 in Clay County, none in Cloud and Ottawa Counties and 1.8 in Pottawatomie County. Average number of borers per 100 stalks was 1.7 in Clay, none in Cloud and Ottawa and 2.4 in Pottawatomie.

Fields in which the European corn borer survey was made also were examined for the presence and abundance of southwestern corn borers.

Girdled stalks containing borers were found in fields of Cloud and Ottawa counties; while larvae, probably southwestern corn borers, were found in one field in Clay County. Infestations in Ottawa County ranged from 8 to 16%; those in Clay and Cloud counties averaged less than 4%.

Alfalfa fields in Clay, Cloud, Ottawa and Pottawatomie counties were surveyed to determine the abundance of yellow clover aphids. Aphid counts, in general, ranged from 2 to 140 per 20 sweeps (15-inch net); however, alfalfa fields in the Republican River Valley in northern Cloud County had populations as high as 70 aphids per sweep. Predator populations were quite low in all the fields examined and no parasites were found.—David L. Matthew.

Alfalfa Aphid Found in Another California County

SACRAMENTO—Another of California's counties—Sacramento—has fallen victim to the spotted alfalfa aphid, the destructive pest first discovered in the state last year.

H. M. Armitage, chief of the Bureau of Entomology, California Department of Agriculture, said that inspections showed infestations in seven premises in the Elverta-Elkhorn area, north of the city of Sacramento.

Some of the infestations were described as heavy.

The report of the spotted alfalfa aphid in Sacramento County closes the gap in the Sacramento Valley which the department previously had reported infested from San Joaquin County to Tehama County.

Variety of Insects In South Carolina

CLEMSON, S.C. — Highlights from the South Carolina Insect and Plant Disease Survey report:

Sorghum midge causes grain sorghum failure in York County. Three-cornered alfalfa hopper causes "yellowing" by girdling plants. Velvetbean caterpillar infestations generally heavy on soybeans in lower Coastal area. Bark beetle damage to pines continues.

Southern corn root worm internal injury to peanuts noted. Lice heavily infest early-planted oats. Spotted infestations of peach tree borer noted. Leaf miner severe on fall tomatoes in Piedmont and present on Coastal cucumber plantings. Cabbage looper infestations on cabbage and collards moderate.

Clemson trap light report: Dingy cutworm most abundant insect caught at Clemson during the year. Considerable increase over last week. True armyworm adults still being captured. Cotton leaf worm adults noted.

Charleston trap light report: No adults of armyworms and cutworms no decline. Corn earworm and tobacco hornworms decline. Decided drop in wireworm catch. Velvetbean caterpillar and grassworm moth catch increased.

Grasshoppers Infest Areas in New Mexico

STATE COLLEGE, N.M. — Grasshoppers were heavy during early October on 35,000 to 50,000 acres of range land in the Capitan, Tinnie-Arabela area of Lincoln County. Another heavy infestation of grasshoppers was reported on 150,000 acres of rangeland in Socorro, Sierra and Catron counties.

Cabbage looper was present in light to medium infestations in lettuce in Dona Ana County, and most growers were taking control measures. Beet

armyworms were also present in lettuce in Dona Ana County.

Cutworms were reported feeding on range plants in Catron County. Except for a summary of the grasshopper adult and egg survey, this is the last New Mexico insect letter until next spring. John Durkin, state entomologist.

Hopper Buildup Disclosed In North Dakota Survey

FARGO—A general buildup in the grasshopper population throughout most of North Dakota is noted in the 1955 fall survey of adult grasshoppers conducted by entomologists of the State Department of Agriculture and Labor and North Dakota Agricultural College Extension Service.

Trouble spots indicated for the next crop season are in McLean County along the Missouri river from Washburn to Parshall; another area in the Stanton-Hazen vicinity; a spot involving parts of Bowman, Slope and Hettinger counties; the irrigated area in Williams County extending from Trenton to the Montana line and the Nesson flats area located east of Williston; the east one-third of the state.

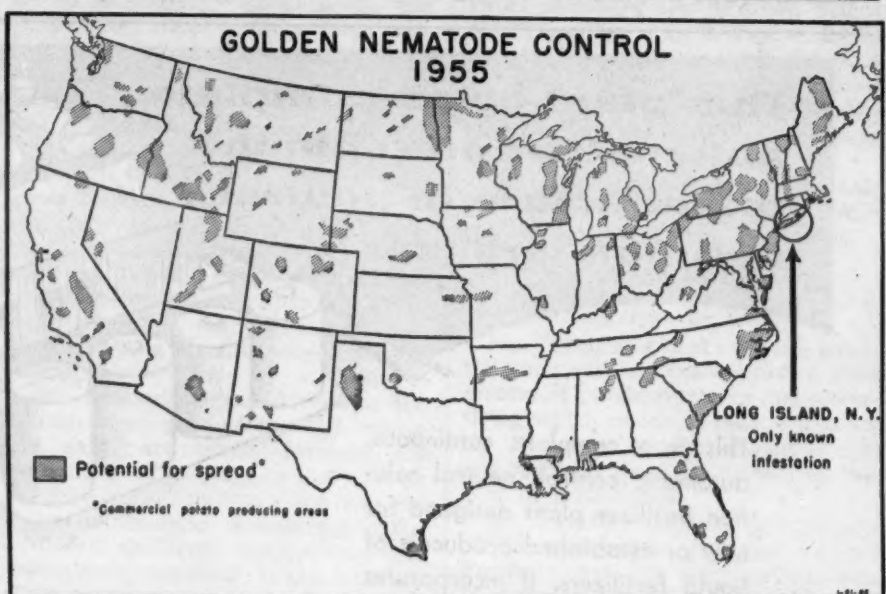
In regard to the large eastern territory showing grasshopper infestation, Wayne J. Colberg, entomologist of NDAC Extension Service, points out that the hopper populations there range all the way from no economic importance to severe in local spots. The infestation is largely confined to legumes, flax and soybeans.

Observations made in the recently completed survey indicate that activity of insects and diseases that prey on grasshoppers was below normal.

The adult grasshopper survey is made each year as a preliminary to a later egg survey, after which a final report will be prepared giving definite information as to the extent of the probable 1956 infestation. Soil sampling in the infested areas to determine the extent of egg laying is now underway.

HORTICULTURAL SHOW

AMHERST, MASS. — The annual Horticultural Show will be held at the University of Massachusetts Nov. 4-6.



WHERE NEMATODES MAY SPREAD—Commercial potato growers the country over keep one anxious eye on their fields for any evidence of golden nematode, a pest that could well spread beyond confines of Long Island, New York. The above map, prepared by the U.S. Department of Agriculture shows the areas (shaded spots) where potatoes are grown commercially and where infestations of golden nematode could do great damage. Much of Long Island is now under tight quarantine to prevent spread of this soil pest. The nematode can be introduced into new areas by many means, including dirt being carried on shoes, reusing bags in which infested tubers may have been packed, dirt clinging to farm machinery such as cultivators and tractors, and, of course, on the potatoes themselves. New means of controlling the golden nematode are being sought, although present nematocides give up to 95% kill.

17.3 Million Acres Allotment Set for 1956 Upland Cotton

WASHINGTON—A national marketing quota of 10 million bales (standard bales of 500 lb. gross weight) and a national acreage allotment of 17,391,304 acres for the 1956 crop of upland cotton have been proclaimed recently by Ezra Taft Benson, secretary of agriculture.

He also announced that a referendum on the cotton marketing quota will be held Dec. 13, 1955. At least two thirds of the cotton farmers voting in the referendum must approve marketing quotas if they are to be effective. A referendum on marketing quotas for the 1956 crop of extra long staple cotton will be held the same date.

Agricultural Stabilization and Conservation state and county committees are now compiling acreage data upon which to base 1956 farm acreage allotments. The national allotment will be apportioned to states, the state allotments to counties, and the county allotments to farms according to provisions of the law. Individual farm acreage allotments will be made available to producers prior to the referendum.

If growers approve quotas in the referendum, price support on the 1956 upland cotton crop will be made available to eligible growers at the full level of the effective support. If quotas are turned down, support to eligible growers will drop to 50% of parity.

Growers who exceed their farm acreage allotments under an upland cotton quota program will be subject to penalties of 50% of parity on the farm's excess production. In addition, all the upland cotton produced on the farm will be ineligible for price support. In general, farm marketing quota—which is an amount that may be marketed from penalty—is the production from the farm's acreage allotment.

In the referendum held last December on marketing quotas for 1955 upland cotton crop, 92% of growers voting approved quotas.

Proper Timing Essential For Defoliation, County Agent Tells Growers

HALE CENTER, TEXAS—Chemical defoliation of cotton is becoming more popular in the Southwest irrigated area, but it should be done at the right time. This is the opinion of Ollie Liner, county agent, who warned farmers not to defoliate the cotton until half the bolls are open. If defoliation is practiced too early, Mr. Liner said, the growth of bolls may stop and the fiber will be weakened.

Since the frost date is near, many observers say there will not be much defoliation done in this area. Farther south on the Plains where cotton is earlier and the frost date comes a week later, defoliation is being done on a large scale.

Near Stanton much of the six-foot cotton has been sprayed with defoliant the last two weeks. Farmers say the cotton was mature but was not opening because of heavy growth. Homer Howard, who has 1,000 acres of tall cotton recently had an airplane spray his field to kill leaves.

"It cost me \$4.20 an acre," he said, "but I figure it is worth it. It speeds up harvest by two weeks. I can get the best of the crop before cold, rainy weather sets in. Another advantage is that the cotton always has the best staple."

Soil and Water Advisory Group Named by USDA

WASHINGTON — The establishment of a formal Advisory Committee on Soil and Water Conservation function on a continuing basis was announced Oct. 18 by Ezra Taft Benson, secretary of agriculture. The first meeting of the 18-member committee was called for Oct. 27-28 at the U.S. Department of Agriculture. The following individuals have accepted appointment:

Leo L. Anderson, Sexauer Seed Co., Fargo, N.D.; Earl Bower, officer, Wyoming Water Resource Board, Worland, Wyo.; R. Edward Baur, National Association of Soil Conservation Districts, Van Meter, Iowa; Dr. Norman E. Bear, Rutgers University, New Brunswick, N.J.; George D. Clyde, Commissioner of Interstate Streams, Utah Water and Power Board, Salt Lake City, Utah; Bill Durham, farm editor, Fort Worth (Texas) Star Telegram, Fort Worth; Charles J. Elliott, former president, Illinois Agricultural Assn., Streator, Ill.; L. W. Garver, Farm Equipment Institute, Soil and Water Conservation Committee, Racine, Wis.

L. Roy Hawes, Commissioner of Agriculture for the Commonwealth of Massachusetts, Sudbury, Mass.; T. H. Hedges, former chairman, Washington Association of Soil Conservation Districts, Waterville, Wash.; Tom Hitch, president, Tennessee Farm Bureau Federation, Columbia, Tenn.; A. D. Holmes, Jr., area vice president, National Association of Soil Conservation Districts, Gallion, Ala.; Mrs. Katharine Jackson Lee, chairman, New Hampshire Natural Resources Council, Peterborough, N.H.; L. L. Males, secretary-treasurer, Washita Valley Flood Control Council, Cheyenne, Okla.; Raymond McConnell, editor, Nebraska State Journal, Lincoln, Neb.; Wade Newlin, R. M. Wade & Co., Portland, Ore.; William Rosecrans, chairman, California Board of Forestry, Los Angeles, and Carl Shoemaker, conservation consultant, National Wildlife Federation, Washington, D.C.

"Soil and water conservation activities constitute a substantial part of the Department's total program of service to agriculture," Mr. Benson said. "It is our desire that the Soil and Water Conservation Advisory Committee function on a continuing basis to advise me, my staff and department agencies dealing with soil and water conservation programs."

Membership on the Advisory Committee will be for three years, with membership so staggered that one third of the members will be new each year. At the outset, one third of the members are being appointed for one-year terms, one third for two-year terms, and one third for three-year terms. The committee will be asked to meet at least once each year, and at such other occasions as may be mutually found desirable.

MANHATTAN, KANSAS — The Kansas Hessian fly population is at the lowest ebb in years, David Matthew, Jr., survey entomologist for the Kansas Entomological Commission, reports on the basis of the 1955 survey which he conducted in cooperation with Elmer T. Jones, U.S. Department of Agriculture.

Infestations were found in only one of the 105 Kansas counties. They were Marshall 1.1%, Riley 1.1%, Linn 1.1%, Cherokee 1.2% and Bourbon 1.3%.

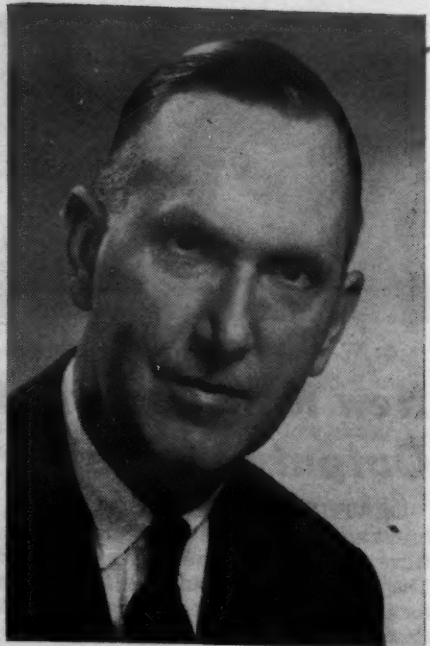
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Garden Supply Show

PORTLAND, ORE.—The fifth annual Northwest Garden Supply Trade Show will be held at the Shrine Auditorium here Oct. 25-26.



Robert C. Hills

FREEPORT PROMOTION — Robert C. Hills has been elected executive vice president and a director of Freeport Sulphur Co. by the board of directors, Langbourne M. Williams, president, has announced. Mr. Hills joined Freeport in 1934 as an assistant chemist in the company's Grande Ecaille laboratory in Louisiana. He has played an active part in the expansion activities of the company, particularly those related to sulphur and nickel. A graduate of Tulane and Cornell, Mr. Hills was named assistant to the president in 1947 and elected a vice president in 1950.

T. H. Barton Named to Monsanto Chemical Finance Committee

EL DORADO, ARK. — Col. T. H. Barton of El Dorado was elected to the finance committee of Monsanto Chemical Co., Edgar M. Queeny, board chairman, announced recently.

The Monsanto board met Oct. 13 at the headquarters of Lion Oil Co., a division of Monsanto. Lion was merged into Monsanto Sept. 30 and this was the first time Monsanto's board had met here.

Col. Barton, a native of Texas, was chairman of the board of Lion prior to the merger. At the time of the merger he was elected to Monsanto's board. He began his business career in Arkansas in 1921 when he organized the El Dorado Natural Gas Co. and became president and a director. This organization later became Natural Gas and Fuel Corp. In 1929, he became president and a director of Lion Oil Refining Co., which later became Lion Oil Co. He served as president until 1947 when he became Lion's board chairman.

Other members of Monsanto's finance committee include its chairman, Charles S. Cheston of Philadelphia, a director; Fredrick M. Eaton of New York, a director; Mr. Queeny; William W. Schneider, vice president, treasurer and general counsel, and Charles Allen Thomas, Monsanto's president, all of St. Louis.

Ralph E. Snyder Co. Joins Cook Chemical Co.

JACKSONVILLE, FLA.—Ralph E. Snyder Co., located here, has been appointed Jacksonville territory representative for Cook Chemical Co., Kansas City, Mo., pesticide producers.

Clyde Porterfield, formerly with Kraft, has joined the Snyder staff as merchandising supervisor. Thomas Howard, previously with Blue Plate Foods Co., is retail merchandiser.

Florida Consumption

TALLAHASSEE—Florida fertilizer consumption during August totaled 96,583 tons, according to the state Department of Agriculture. This included 32,209 tons of mixed goods and 64,374 tons of materials.



The
Week in

WASHINGTON

Despite Farm Price Tempest, Field Crop Income Gains in Most Regions of U.S.

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON—There appears to be little in the record to support the current claims from some quarters that the policies of Ezra Taft Benson, secretary of agriculture, are undermining the structure of the farm community.

In fact, according to the official farm income report of the U.S. Department of Agriculture, income from field crop sources is up this year in many sections of the U.S.

Croplife reported recently (page 1, Oct. 10) that reliable USDA economic sources felt that there was ample opportunity for continued profitable use of plant foods, particularly in the Great Plains states, on field crops at the present farm price levels.

There are rumblings, however, that farm income from these field crops is down, and farmers are reluctant to spend cash for such important production items as fertilizer and farm equipment.

It is correct to say that total farm income from all commercial farm marketings is down more than \$500 million for the first nine months of 1955 as compared with 1954.

But regional reports of farm income from field crops for the first nine months of 1955 as compared with 1954, show some significant figures.

In the East North Central region—Ohio, Indiana, Illinois, Michigan and Wisconsin—farm income from field crops for the first nine months of 1955 was down only \$10 million from 1954 with virtually all of this decline reflected in Illinois.

In the West North Central region farm income from field crops for this same period this year is reported by USDA as nearly \$70 million better than in 1954.

Some small declines in field crops income is reported for South Dakota, Nebraska and Missouri. Significantly, in North Dakota, where some of the stoutest criticism of Mr. Benson takes root, the farm income from field crops is actually up about 8% from 1954.

In the western region, including the Mountain and Pacific Coast states, farm income from field crops is up \$35 million over the same period for 1954. Montana and Colorado are the only states in this group disclosing any serious decline in field crop income.

On an all farm products basis, field crops and livestock, this western region is better off farm income-wise in the first nine months of 1955 than in 1954 by nearly \$20 million.

The area worst hit in income for field crops is the South Central region

containing most of the Cotton Belt states where farm income from field crops is down approximately \$65 million. On the surface this condition would appear to reflect the reduction in acreage in tobacco and cotton—both of which incidentally are still being supported for the present year at 90% of parity.

For the other regions, relatively unimportant in field crop production, the North Atlantic and the South Atlantic, farm income from field crops is up substantially from last year.

These figures from the USDA farm income report should make sober reading for companies laying plans for selling to the farm field in the coming year. They certainly should provide a sounder base for plans than the tempest of criticism that has developed around Mr. Benson.

Warehousing Point

GASTONIA, N.C.—Naugatuck Chemical Division of United States Rubber Co. will warehouse supplies of its agricultural chemicals at the firm's new latex processing plant here, according to John E. Caskey, vice president and general manager of Naugatuck Chemical. The division's new facilities were formally opened Oct. 12.

AGRONOMIST TO MOVE

MANHATTAN, KANSAS — Dr. Robert C. Pickett, associate professor of agronomy at Kansas State College, has been named to a similar position at Purdue University.

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SOILS and FERTILIZERS

Fourth Edition

By FIRMAN E. BEAR, Research Specialist, New Jersey Agricultural Experiment Station.



1953. 420 Pages \$6.00

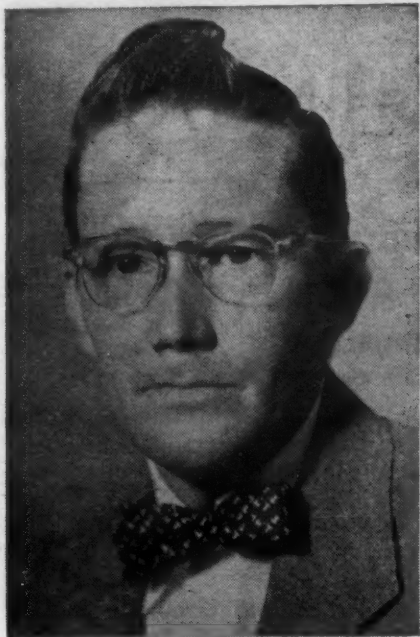
In plain language, this new edition tells how recent modern advances in soil technology affect plant growth and annual yield . . . and how the effective use of basic methods can increase the productivity of farm lands. New facts, accurate figures, and 66 pointed illustrations show the relation between crops and soils.

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W. R. Stephens

Barnard and Leas Expands into Chemical Plant Manufacture

CEDAR RAPIDS, IOWA — Walter C. Ronk, vice president of Barnard and Leas Mfg. Co., Inc., Cedar Rapids, manufacturer of grain and feed processing equipment, has announced the expansion of Barnard and Leas facilities to include agricultural and general chemical processing plant design and manufacture.

W. R. (Steve) Stephens, who has specialized for many years in chemical processing plant design and operation, has been made manager of the department. He is currently directing the development of B & L "package plants" for producing neutral solution fertilizers. Mr. Stephens comes to Barnard and Leas from Trenton (Mich.) Chemical Co., where he was general manager and treasurer.

Growers Report Success With Nitrogen on Wheat

PORTLAND, ORE. — Reports of success with nitrogen fertilization of wheat continue to come in from county agents throughout Oregon. In Wasco County, E. M. Nelson, county agent, reported that in five out of seven trial locations, production of wheat had nearly doubled with the use of 40 lb. of nitrogen. Yields were not increased on two plots in shallow soil areas. One producer in Wasco County increased yields of wheat from 30 to 50 lb. with 100 lb. of nitrogen.



Glenn Gullikson

WACA Names A. F. Kirkpatrick As New President

BERKELEY, CAL. — A. F. Kirkpatrick, American Cyanamid Co., was elected president of the Western Agricultural Chemicals Assn., at the organization's annual meeting held at the Claremont Hotel Oct. 11. Other officers named at the meeting include Harvey Bales, Arizona Pest Control Co., vice president, and C. O. Barnard, reelected executive secretary and treasurer.

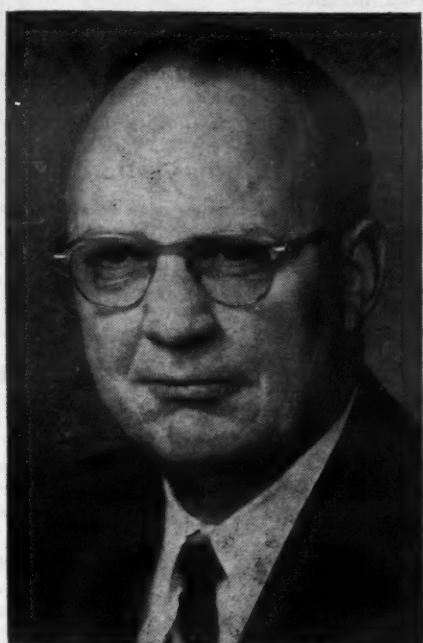
Eight directors also were named to serve with a like number of hold-over members of the board. The new additions are E. J. Davis, Los Angeles Chemical Co.; Ivor R. Burden, United-Heckathorn Co., Ltd.; Mr. Kirkpatrick; Keith Sime, Chipman Chemical Co.; J. H. Neal, Hercules Powder Co.; W. L. Piquet, Sunland Industries, Inc.; Jack White, White Chemical Co., and O. B. Hitchcock, Chemagro Corp.

A program of three addresses preceded the business meeting. E. D. Maloney, vice president and general manager of the northern California area, Pacific Telephone & Telegraph Co., spoke on "Salesmanship and Sales Management." A technical paper on pesticides was presented by Dr. Rose Marie von Rümker, director of research for the Chemagro Corp., and Robert Z. Rollins, assistant chief of the bureau of chemistry, California Department of Agriculture, discussed "Responsibilities of Pesticide Salesmen."

A. W. Crossley Named Executive Vice President Of Shea Chemical

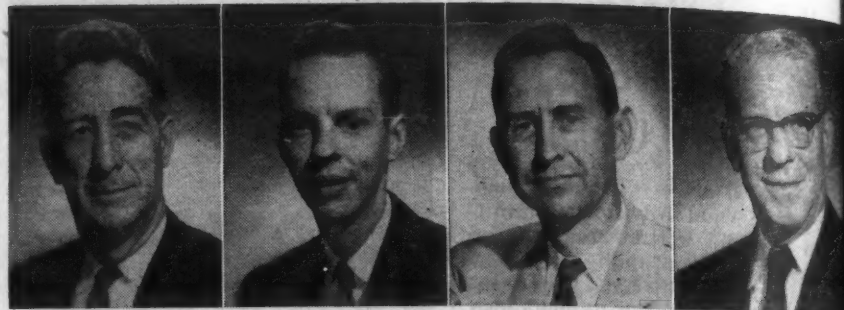
JEFFERSON, IND.—Appointment of A. W. Crossley as executive vice president has been announced by Vincent H. Shea, president, Shea Chemical Corp. Mr. Crossley will be located at Jeffersonville, Indiana, where the firm's home offices have been located since they were moved from Baltimore, Maryland, this summer.

From 1948 until recently, Mr. Crossley was treasurer of the Diamond Alkali Co., Cleveland. Prior to 1948, he was assistant general manager, Potomac Electric Co., Washington, D.C. He holds degrees in chemical engineering, law and business administration.



Theodore L. Bendall

DOW SECTION HEADS—Shown above are the men who head up new groups formed by Dow Chemical Co. to strengthen and expand activities in marketing agricultural chemicals. (See page 2 of the Sept. 26 issue of Croplife.) Glenn Gullikson, head of the merchandising section for two years, is supervisor of the farm products group, which coordinates the work of product managers responsible for marketing herbicides, insecticides, fungicides and soil and grain fumigants for use on the farm. Theodore L. Bendall, for eight years head of agricultural chemicals sales for Dow's New York, Boston and



A. W. Bintner Paul E. Snow Wilbur M. Lehman A. E. Davidson

New Kansas Firm Building Plant for Output of Pelleted Fertilizer, Mixtures

OLATHE, KANSAS — Ground breaking ceremonies for a new fertilizer plant took place here Oct. 10. The plant is being built for a newly formed company, Deep Root Fertilizers, Inc., and is expected to be completed about Dec. 1.

The firm was organized recently by a group of Johnson County business men. A. W. (Bob) Bintner, president of the company, has been associated with the fertilizer and farm chemicals industry for some years in Kansas City. Wilbur M. Lehman, treasurer and general manager, was for six years zone manager of 12 mid-western states for the Agricultural Chemical Division, Sherwin-Williams Co., and more recently has been an official of the Farmers State Bank of Gardner, Kansas.

Paul E. Snow, vice president, and A. E. Davidson, secretary of the company, formerly were associated with the Kansas Grain Co. Division, Flour Mills of America, Inc., Kansas City, and Mr. Snow later was engaged in the fertilizer business in Kansas City. Chairman of a 15 man board of directors is Andy Klein, Johnson County motor car dealer.

Maurice Hubbard, attorney for the firm, said that Johnson County residents had subscribed to about 90% of the total stock subscriptions. Investment in machinery, building and land will be about \$185,000, it was reported.

A luncheon sponsored by the Olathe Chamber of Commerce was attended by company officials, stockholders and civic leaders. Dr. William A. Albrecht, chairman of department of soils, University of Missouri, was guest speaker at the luncheon.

From 20 to 30 persons will be employed in the new plant, which will produce pelleted blended fertilizers, including trace minerals. It is planned also to produce fertilizer-

pesticide mixtures to order. Product will be marketed through distributors in middle western states. David Lorenz, of Standart & O'Hern Advertising Agency, Kansas City, has been appointed to handle advertising and sales promotion.

Hercules Net Sales Income Increase

WILMINGTON—Hercules Powder Co. reported for the nine months ended Sept. 30, 1955, net income equal, after preferred dividends, to \$5.18 a share on common stock outstanding.

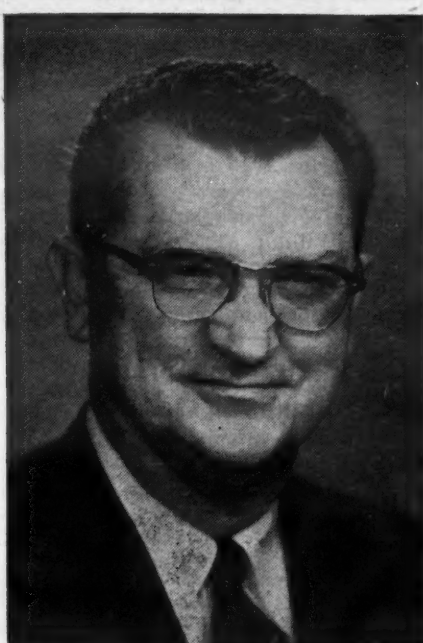
Net income for the first nine months of 1954 was equal, after preferred dividends, to \$3.89 a share on common stock outstanding.

For the third quarter of 1955 net income was equal, after payment of preferred dividends, to \$1.80 a share on common stock. This compares with net income in the third quarter of 1954 equal to \$1.31 a share on the common stock.

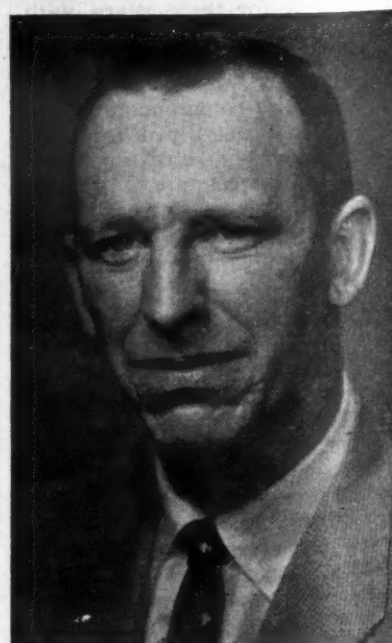
Net sales and operating revenue for the nine months' period were \$169,791,798 compared with \$140,191,466 for the corresponding 1954 period.

Hearing Being Held

SACRAMENTO — The California Department of Agriculture is holding a public hearing in Sacramento Oct. 24 to consider proposed changes in regulations concerning inspection methods used in enforcement of fruit and vegetable standards and seed potato certification. The regulations in question have been used as administrative guides by the department for many years but never have been made a part of the administrative code.



Hillard L. Smith



Howard W. Sheldon

Philadelphia offices, heads up the industrial products section, which coordinates activities of product managers handling the sale of the firm's materials in utility, highway, railroad, industrial property and other fields. Hillard L. Smith, head of herbicide sales for seven years, supervises a group that handles long range sales planning, development of markets for new products and new uses for established materials, educational activities for the sales staff and contacts with farm advisers and farmers. Howard W. Sheldon, with the merchandising group the past year, is now supervisor of that group.

Fertilizer Bank

MARSHFIELD, Ind. banker and a have proved in alfalfa is the for Central W. mena soils.

The Citizens' is loaned \$100,000 since 1950 fertilizer for alfalfa.

Farmers in a 30 Marshfield tell the Clifford Dix, Marshfield, says, "I've got tons of alfalfa before, he figures a ton from the they raised only Extra feed from fertilized land n. Miller could feed it buying any ex. had to buy mo. started raising through a liberal Citizens' National

John Stauber, a farmer who has put alfalfa on 10 acres for a maximum of 500 total—for e

Some farmers in Marshfield are getting the low price of alfalfa. Mr. Stauber says his alfalfa is worth more than the alfalfa he is buying. He says his alfalfa is worth more than the alfalfa he is buying. He says his alfalfa is worth more than the alfalfa he is buying.

There is a pay standpoint, too, in some cases, alfalfa and dairy. The crop year and the farmer's better prospect for improve business.

Getting better alfalfa stands is a problem for farmers in other areas, but it was alfalfa here. A couple tons of alfalfa is a good alfalfa. Many other W. alfalfa soils need to six and seven to 1,000 lb. per acre.

Some farmers are putting alfalfa on alfalfa. Mr. Stauber says his alfalfa is worth more than the alfalfa he is buying. He says his alfalfa is worth more than the alfalfa he is buying.

There was plenty of alfalfa. Mr. Stauber's concern is that farmers around the world have been selling alfalfa in other areas. Mr. Stauber found that alfalfa is worth more than the alfalfa he is buying. He says his alfalfa is worth more than the alfalfa he is buying.

Mr. Truog and his family knew that alfalfa was the key to the Spencer's alfalfa business and fertilization. He reasoned that if alfalfa was the key to the Spencer's alfalfa business and fertilization, then alfalfa was the key to the Spencer's alfalfa business and fertilization.

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Fertilizer, Lime Loan Program of Wisconsin Bank Helps Alfalfa Make Profitable Comeback

MARSHFIELD, WIS.—A Marshfield banker and a hundred area farmers have proved in the past five years that alfalfa is the number one hay crop for Central Wisconsin's Spencer-Corona soils.

The Citizens' National bank here has loaned \$100,000 in 2% loans to farmers since 1950—all for lime and fertilizer for alfalfa fields.

Farmers in a 30-mile radius around Marshfield tell the results.

Clifford Dix, who farms near Marshfield, says his fields average four tons of alfalfa hay per acre. Before, he figured he was lucky to get a ton from the same fields when they raised only clover and timothy. Extra feed from heavily limed and fertilized land meant that Harold Schiller could feed 17 milk cows without buying any extra hay. Mr. Schiller had to buy most of his hay before started raising alfalfa, financed through a liberalized loan from the Citizens' National.

John Stauber, bank vice president who has pushed the loan program, usually confines his 2% loans to 10 acres for each farm, and loans a maximum of \$50 per acre—\$500 total—for establishing alfalfa.

Some farmers like Ray Egger from near Marshfield have taken advantage of the low interest rate two or three times. Mr. Egger realized a big saving when his increased hay yields meant no more hay buying.

William Weis from Spencer, Wisconsin, says his hay yields increased from a couple tons to five tons per acre when he took a loan from Mr. Stauber and combined heavy liming and fertilizing with alfalfa seed.

There is a payoff from a banker's standpoint, too, Mr. Stauber says. In some cases, the difference in field and dairy production during one crop year pays off the loan, and the farmer becomes an even better prospect for normal credit to improve business for everybody.

Getting better hay yields from good alfalfa stands is old stuff to many farmers in other sections of Wisconsin, but it wasn't so easy to raise alfalfa here.

A couple tons of lime and around 10 lb. of fertilizer are enough to get good alfalfa stands established in many other Wisconsin areas. The Spencer soils needed line applications of six and seven tons per acre, and 10 to 1,000 lb. of commercial fertilizer.

Some farmers thought it wouldn't pay to put that much expense into each acre of hay land, but results proved differently.

Mr. Stauber called on Emil Truog, University of Wisconsin soils specialist, and Russell Johannes, Marshfield Branch Experiment Station superintendent in 1948 to see what could be done about raising more hay in this area.

There was plenty of reason for Mr. Stauber's concern. Around 20 years ago, farmers around Central Wisconsin had been selling hay to farmers in other areas. But in the '40s, Mr. Stauber found himself constantly getting more money to farmers who were buying hay—and poor quality, that.

Mr. Truog and Mr. Johannes already knew that alfalfa would grow on the Spencer soil—with plenty of lime and fertilizer. Mr. Stauber reasoned that if farmers could borrow money for seeding alfalfa instead of to buy hay their entire farming operation would be improved, along with the economy of the region as a whole.

Mr. Stauber held meetings with several other bankers from nearby

cities and towns to promote easy credit for better forage production.

He didn't get too much farmer response until 1950, but he spent the first two years "setting the stage," as he says it. He found that he needed to use a lot of newspaper, radio, and other advertising to urge farmers to take advantage of the low-interest loans.

This was his offer:

A farmer could borrow up to \$50 per acre for as many as 10 acres. Some farmers with especially good credit ratings could get more. Interest rate was 2% for the first two years. The loan could mature then into a normal 5% loan.

While the usual maximum was \$500, some farmers have borrowed \$1,000 to \$1,200 under the plan since 1951. Mr. Stauber reports no defaults on any 2% loans made. The farmer simply had to agree to put on lime and fertilizer as prescribed by soil test.

Most bankers in this area now have some sort of liberal credit plan for cropland improvement. Loans for buying hay have been cut to a bare minimum.

Three farmers near Marshfield agreed to use their land as "pilot farms" in 1950. Mr. Egger, Gerald Johnson, and Eugene Weber put the "sure-fire" alfalfa preparation to test on some of their own land. They let

it be known that anyone could visit their farms to see how it paid off.

Mr. Weber's land needed 1,000 lb. of 0-10-30 and four tons of lime divided in application between fall, 1950, and spring, 1951. This application went on 30 acres, and none of it has been plowed before this fall. Even now, Mr. Weber says he'll plow simply to keep his crop rotation going.

The hay fields are averaging four to five tons of hay per acre annually, compared to a couple of tons from the clover he used to raise.

"I used to have a year of clover hay, a year of timothy, and then a year of poor pasture," Mr. Weber says. "Now I can carry twice as many dairy cattle as I did before 1952. You just can't beat that alfalfa-brome mixture for good hay and pasture."

Mr. Stauber, 57, now called "Alfalfa John" by area farmers, received honorary recognition from the Wisconsin Grassland Committee in 1952, and was vice president of the Wisconsin Bankers Assn. the same year. A native of Marshfield, he has been working in the same bank since his boyhood.

He is also active in the "Trees for Tomorrow" program and annually sponsors scholarships for local young

men attending the University farm short course.

Of course, Mr. Stauber alone didn't finance all the alfalfa seedings in this area. He says himself that "of all area farmers, probably three fourths financed alfalfa production themselves. Our part in it was helping get the idea started. The county agents and state experiment station people knew all the time that alfalfa could grow well here. Our job was to get the farmers to prove it to themselves."

Chester R. Beam Joins American Potash & Chemical

LOS ANGELES—Chester R. Beam, formerly an inorganic chemist with the United States Bureau of Mines at Albany, Ore., has joined American Potash & Chemical Corp. as a research engineer at the company's main plant at Trona, Cal. Mr. Beam is a graduate of Montana State College at Bozeman.

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C. E. Millar, Professor Emeritus of Soil Science, Michigan State College.

A fundamental treatment of the principles of fertility in the soil, with major emphasis on the plant itself. Relevant aspects of soil chemistry, soil physics, soil microbiology and plant physiology from viewpoint of their influence on plant growth. Each major plant food element and the more important micro-nutrients fully treated with respect to supply in the soil, sources and amounts of additions, losses from the soil, functions in plant growth and plant symptoms of deficiency. Covers all sections, with considerable space to saline soils and soils of southern latitudes \$6.75

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SOILS AND SOIL MANAGEMENT

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A complete study of soils; physical properties, soil organisms, organic matter, relation of water, control of water, tillage, erosion, acidity and its control by liming, management of alkali soils, nitrogen and its importance to the farmer, production, conservation and utilization of farm manures, production and utilization of green manure crops; fertilizer materials and their effects on soils; crop rotations; fertilization and long-term maintenance of productivity of mineral soils. Published 1941. 424 pages, illustrated \$6.00

SOIL SCIENCE SIMPLIFIED

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A concise textbook dealing with basic concepts of soils. Much useful information for students in agriculture, farmers, fertilizer salesmen, etc. 68 pages, paper bound \$1.00

IRRIGATED SOILS: Their Fertility and Management—New 1954—Second Edition

D. W. Thorne and H. B. Peterson, Department of Agronomy, Utah State Agricultural College. Dr. Thorne is also Chief of Soils and Fertilizer Research Branch, Tennessee Valley Authority.

An outstanding text dealing with the problems of irrigated regions. In addition to the chapters dealing with irrigation, the salt problem, reclamation of saline and alkali soils, there are chapters on maintaining organic matter in soil, minerals and plant growth, fertilizer elements and fertilizer materials, using fertilizers, soil management for general field crops, for fruit, vegetable and specialty crops \$6.50

THE RESPONSE OF CROPS AND SOILS TO FERTILIZERS AND MANURES (1954)

W. B. Andrews

A new book, with special reference to Anhydrous Ammonia and other sources of nitrogen in liquid form. Deals also with legumes as a source of soil nitrogen, and the uncertainty of green manures; the response of soil to phosphorus, potash and soda; the effect of fertilizers on yield and feeding value of hay and pasture crops. 468 pages, 19 chapters, 89 illustrations \$4.50

CHEMICALS, HUMUS AND THE SOIL

Donald P. Hopkins

The theme of the book is the necessity of chemical fertilizers to maintain the fertility of the soil. It has concise information on which soil conditions and which chemical fertilizers are most suited for special crops and vegetables. Space is devoted to cereal crops, barley, wheat, oats and rye; to roots and tubers, sugar beets, potatoes, carrots, parsnips and turnips; to vegetable crops, beans, peas, alfalfa, lupines; to grasses and clovers; to onions, flax, kale, cabbages, lettuce, tomatoes, celery, cauliflower and fruits. It clarifies the relationship of manures, compost and chemicals as fertilizers and points out how chemicals should be used to obtain the best results. Its philosophical soundness and logic should do much to avert the confusion of thought introduced by the advocates of compost and manure as against the use of chemical fertilizers \$8.50

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JOHNS-MANVILLE PLANT—Micro-Cel, a new line of synthetic calcium silicates announced by the Celite Division of Johns-Manville, will be produced in this plant being built at Lompoc, Cal. The plant is expected to be in production early in 1956 at which time these new synthetic calcium silicates will be available on a national basis. (See story on page 1.)

PESTICIDE OFFICIALS

(Continued from page 1)

Elected to serve on the executive committee were J. T. Coyne, Pesticide Regulation Division, U.S. Department of Agriculture; and E. R. Winterle, Tallahassee, Fla. These men succeed W. G. Reed and Floyd Roberts. Registration for the one-day meeting totaled 94 state pesticide control officials and industry representatives. There were 32 states represented by the control officials.

Mr. Epps, in his presidential address, reviewed some of the current problems facing pesticide control officials. He told his fellow officers that regulatory acts must be broad in their interpretation and added that "there is no room for hair-splitting definitions" which would only add to the burden of administration of regulations.

Mr. Epps said, too, that the average purchaser of pesticides "expects results and expects them quickly," and he asked the control officials whether "we should permit the sale of products which do not measure up to our standards."

He cited reports from entomologists which indicated that the boll weevil was building up a resistance to chlorinated hydrocarbons and that cotton-growers were complaining that the insecticides were ineffective. "Should we continue to permit the sale of this type of insecticide, or should we modify our regulations?" Mr. Epps asked his audience.

Mr. Barnard, in his address, suggested the formation of a plan of cooperative action by the trade associations, federal and state regulatory agencies and possibly the state agricultural experiment stations and extension services, plus manufacturers, which would result in a widespread campaign to promote safe practices in the handling and use of pesticides.

"In the use and post-use category of pesticides, farmers and their employees, and ground and air service operators have created and are creating problems which industry thinks should not, but nevertheless are, being dropped into industry's lap," Mr. Barnard said. "Those end use groups far too often ignore the instructions and recommendations for use and handling given on labels."

"For the record, I shall say that label information is accurate and explicit. It is the combined product of manufacturers of integrity, the agricultural experiment stations and the federal and state regulatory agencies. Labels are designed for one purpose:

the safety of agricultural personnel and the general public."

Mr. Barnard said that in too many instances the end use groups disregard responsibility for safe disposal of empty metal containers. This type of container, he said, has become a frustrating problem on the West Coast.

Agricultural inspectors at one air strip, he said, "drained the residual pesticide from 10 1-gallon cans and collected a full gallon of a very potent compound. In addition to the very great hazard of the residual pesticide, an economic loss of 10% was involved."

He told the pesticide control officials that all associations and agencies involved in the sale and use of pesticides should give consideration to the formation of committees to explore the situation.

Dr. Conley, in his address, pointed out that a new class of chemicals has been established with the introduction of pesticides. At first, he said, physicians were prone to dismiss the problem of toxicity but with an increasing number of poisonings, the American Medical Assn. has recognized the need for information for use in treating such cases. The AMA has established a committee on toxicology and is supplying physicians with its latest recommended treatments. Dr. Conley reported an "improved attitude on the part of physicians regarding the toxicity of pesticides."

G. L. Brown, research laboratories of Rohm & Haas Co., Philadelphia, was the third speaker on the morning program. Mr. Brown presented technical data on emulsifiers and other pesticide adjuncts. His presentation was aided with the use of projection pictures.

The remainder of the program consisted of the presentation of reports from the chairmen of the various committees, 18 in all.

FALL APPLICATION

MADISON, WIS.—Nitrogen—alone or in complete fertilizers—can be applied to most Wisconsin soils after mid-October, says C. J. Chapman, University of Wisconsin soils specialist. He says on silt or clay soils, it's okay to apply 10-10-10, ammonium nitrate, ammonium sulfate or anhydrous ammonia in the fall. There isn't much danger of nitrogen leaching, especially this year, according to Mr. Chapman.

PESTICIDE EXPORTS

(Continued from page 1)

tural insecticides and related materials—include new organic pesticides not separately classified—37%; household and industrial insecticides, 19%; and weed killers, 8%. On the other hand, exports of sulfur formulations, with 20% or more sulfur, dropped 81%.

In areas of destination, North America continued to be the largest market valuewise for pesticides, rising 29% over the first half of 1954. Specifically, exports to Costa Rica tripled those of January-June 1954, and shipments to Mexico almost doubled.

U.S. exports of pesticides to South America remained about the same; however, shipments to Argentina were over 3 times as great, and those to Uruguay were 13 times as much as in the first half of 1954. Exports to Cuba decreased 26%, but shipments to the Caribbean area were up 12% compared with January-June 1954 shipments.

Exports to Europe rose 41 percent in the face of increased production of pesticides in that area, with France receiving 3 times and Spain 10 times the amount procured in January-June 1954. As a market for U.S. pesticides, Asia and Oceania were almost 40% above the 1954 level. Shipments to India were two and a half times those in January-June, 1954, to Iraq and Saudi Arabia three times as much, and to the Philippines twice the 1954 amount.

Exports to Africa were 80 percent higher, and to the Belgian Congo and the Union of South Africa more than twice the amount shipped in January-June 1954. Conversely, shipments to Iran were only half as great, and those to Taiwan were less than a third of those in the first half of the preceding year.

Output of pesticides in January-June 1955, except for lead arsenate and benzene hexachloride, was generally far ahead of the first half of 1954.

Production increases in major commodities were as follows: 2, 4, 5-T, 31%; calcium arsenate, 28%; DDT, 18%; copper sulfate, 9%—manufacturers' stocks on June 30, 1955, however, were only 40% of those on hand a year earlier; 2,4-D, 2%. Production of lead arsenate was down 33% and output of BHC—100% gamma basis—was 32% lower.

Charles M. Comstock, Carlton W. Crumb in New Dorr-Oliver Posts

STAMFORD, CONN.—Dorr-Oliver Inc., has announced the promotion of Carlton W. Crumb to the new post of director of technical data and Charles M. Comstock to the position of advertising manager. A veteran of 28 years service with the present Dorr-Oliver organization, Mr. Crumb was formerly sales promotion manager while Mr. Comstock served as assistant sales promotion manager.

In his new position, Mr. Crumb will be responsible for the worldwide dissemination and exchange of technical information within Dorr-Oliver and its seven associated companies abroad. He will head up the reorganization of existing technical data facilities which will be expanded to promote a greater interchange of technical information within the various divisions of the company.

Mr. Comstock, as advertising manager, will be responsible for the preparation and production of all space advertising, direct mail, trade exhibits and promotional bulletins. In addition, he will handle all special promotional material required by the sales department.

Coke Oven Ammonium Sulfate Production Shows August Gain

WASHINGTON—August production of ammonium sulfate as a chemical totaled 161,097,514 lb., an increase from 157,876,678 lb. in July and 128,399,700 lb. in August a year ago, the Bureau of Mines has reported.

Sales in August totaled 82,256,950 lb., a decrease from sales of 129,960,665 lb. in July and 84,442,800 lb. in August, 1954. Stocks at the end of August this year were 286,954,567 lb. compared with 199,935,203 lb. a year earlier.

Calendar year production to the end of August totaled 1,283,409,200 lb., up from 1,087,945,500 lb. during the corresponding period in 1954.

August Production Of Superphosphate Down from Year Ago

WASHINGTON—U.S. production of superphosphate during August amounted to 136,722 short tons (100% A.P.A.), according to the Bureau of the Census, Department of Commerce. This figure represents an increase of 46% from the revised July, 1955, output and is 10% less than the figure reported for the corresponding month of 1954.

Shipments of all grades of superphosphate totaled 89,683 tons for August or an increase of 39% from the previous month's volume but no significant change from the figure reported for August, 1954. Stocks on hand at the end of August were approximately the same as those held on Aug. 1, 1955 and 2% less than the quantities on hand as of Aug. 3, 1954.

New Delaware Firm

DOVER, DEL.—Fertilizer Construction Co., Inc., has filed a charter of incorporation with the corporate department of the Secretary of State's office here. Authorized capital stock of the firm is \$100,000. Corporation Trust Co., 100 West 10th Street, Wilmington, Del., is serving as the principal office.

DAVISON PLANT

(Continued from page 1)

Distribution from the plant will be through Davison dealers already established in the area, and additional dealers.

The Wakarusa plant will bring to 20 the number of Davison plants concerned with production of fertilizer materials or mixed fertilizers. It will be in the district managed by Bernard C. Manker, whose headquarters are at Lansing, Mich., and Mr. Manker has appointed one of his staff, Frank Goris, to be manager at Wakarusa. Mr. Manker and the other two fertilizer district managers report to W. N. Watmough, Jr., Davison vice president at Baltimore company headquarters.

A company statement said that "the operation will provide means for advancing knowledge of materials and of testing improved processing methods. Its main purpose will be to serve as the focal point of a program to expand the market potentialities of liquid fertilizer—this include study of needed analyses, better application methods and cooperation with dealers for more effective sales operation. The Wakarusa location was chosen because the area comprises all four main types of farming—grain, vegetable, fruit and berry, and livestock, and is a large consumer of fertilizer."

"A course of research to be pursued vigorously will be for means of formulating high analysis fertilizers which will not salt out."

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Better Selling

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

How to Make a Profit In the Farm Supply Field

There are a few basic principles to be understood which provide for making a profit for the retail dealer.

It is highly necessary that a company has the right products or merchandise to sell. It is equally important that the methods used in the business be ethical and effective. The third and most important point is the personnel within the organization, the personnel being the most valuable asset of the company.

The methods used in business can affect personnel both good and bad. They can also affect trade relations, customer relations, and unless the methods are highly efficient and rigidly observed, the public will soon form their opinion with regard to the company itself.

The economy of our nation and the world has been experiencing a great transition. Many factors are now affecting successful business operations. Some of them are actually hard to see.

It is highly important that objectives be planned and that teamwork be established to head off such things as waste, losses and failures.

Management is now subjected to the trials of change, because it is highly necessary for business to keep pace. We have many people who are new in managing positions; some who have never done business when the going is tough.

Too many executives, owners and managers of businesses have practiced the rendering of decisions without proper consultation with other people in responsible positions.

We believe that the time has arrived when business must upgrade quality merchandise and lower cost.

We also feel that the elimination of waste in every department is highly essential. We recommend that the management study personnel throughout the business, eliminate those that are not productive, and keep all personnel above average.

We feel that every department must know its costs and work on a budget program.

When a man or a group of men decide they want to go into a business or buy a business, whether it be retail or manufacturing, we think it would be well for them to stop and ask themselves—"what do we need?" The following points must be given careful consideration.

1. Finances
2. Plans and programs
3. Raw materials—products
4. Manpower
5. Public acceptance

I would like to share with you some of the things that have been

EDITOR'S NOTE: Are you using procedures which violate principles of successful salesmanship? The accompanying article, adapted from a talk by J. H. Burrell, outlines some rules which are essential if retailers are to make money. It tells what errors good retailers avoid. Mr. Burrell, president of James H. Burrell & Sons, Inc., industrial and agricultural consultant, St. Louis, spoke on "How to Make a Profit" at the Colorado Grain, Milling & Feed Dealers Assn. convention at Denver.

studied in other organizations, and how profits have been greatly influenced by these studies. For example:

The National Biscuit Co. found they were having irregularities in plant production. At one plant, one extra cookie was going into each box of cookies packed. It cost \$1½ million per year for this error.

The Dixie Cup Co. recently made a change of stacking cups at the end of a line, where 60 women were required to handle them. A change was made which saved the company \$500,000 per year.

The Vendo Co., Kansas City, had its silk screen lettering work done in the basement of its plant. This required the moving of machines in and out of the basement. By moving the painting operation into the production line, production costs were lowered \$20,000 plus the elimination of damage in moving the machines to and from the basement.

An important phase in formulating standards for establishing and operating a retail farm store has to do with total asset investment and profitable return on the investment. Many variables enter into this standard, such as:

1. Rented or leased properties or ownership of buildings and land.
2. Inventory size, governed by credit policies, etc.
3. Whether merchandise is handled on consignment basis or cash purchase.
4. Accounts receivable policies.

However, we can establish this fact, that a good, profitable retail farm store should return at least 15% yearly net profit on investment.

Analyze credit terms and credit control program. Anything that can be done to:

1. Sell more for cash.
2. Sell more on short-term than long.
3. Collect accounts faster on the average,

will enable the dealer to get more from what he has in receivables.

An analysis of the merchandise account will reveal that gross sales can be increased in direct proportion to the number of times merchandise inventory turnover rate is increased.

The merchandise turnover increase will depend on how many lines the dealer carries, his closeness to sources of supply, and how good a job he does on inventory control. Anything that can be done along these four lines will enable the dealer to get more from what he has in merchandise.

1. Eliminate duplicate lines.
2. Eliminate items that do not "go" in his market.
3. Plan buying to fit more closely with expected sales volume.
4. Watch stocks and push those items not moving as they should.

Good merchandising begins with the exterior of the store; painted front, clean windows and good identification. Windows are the face of any store. Customers are evidently impressed by them for it is claimed that 50% of the sales of a store are made through window displays. Probably this is true, because people learn

(Continued on page 14)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

The middle of the fall selling season is on us. Farmers have more time to come to town now and take a look around. Make sure your window and in-store displays are changed frequently. New displays each week are an ideal program.

Now is the time when you can use the telephone and on-the-farm calls oftener to add to your sales efforts. Your customers have more time to listen to you.

See your suppliers about mailing pieces. Check your mailing list.

Is it up-to-date? Make sure you're following through on your direct mail program. If one is not in progress, study the possibility of budgeting a certain sum for direct mail next year.



By RAYMOND ROSSON
County Agent, Washington County, Tenn.

I saw this advertisement in our local paper some time back. Salesmen Wanted. . . Yes Sir, that's correct . . . we are advertising for several salesmen, or to put it another way, we are on the look-out for some people who would make good salesmen.

We are not too particular about your age, neither does it matter as to your present employment, the fact of the matter is, you can continue to work at your present job; because it will not require an awful lot of time. Are you interested?

If you are interested, we'll be delighted to discuss the proposition with you. You can contact any of the firms responsible for this advertisement or the advertising department of this publication. A salesman of the type we have in mind could be used in every business establishment, every office, school room, bank or in church circles.

The one requirement necessary to succeed in this position is, "You must be interested in a better agriculture, not only for Washington County, but for the entire area."

Items for sale are . . . better pastures, better hays, especially alfalfa, artificial breeding, better livestock, better tobacco, more eggs per hen and more milk per cow . . . better use of fertilizer and machinery . . .

We know you are interested because, when agriculture is in good position, business likewise is in good position . . . and as to remuneration for being a good salesman . . . you already know the story about, "Bread Upon the Waters."

There has been a miracle of achievement in the past two decades. Let's show a gain in the next decade. Are you interested?

More Profits

A device which is valuable for emphasizing the need for additional fertilizer in your sales area is the use of reprints from your state's university farm research showing profits possible when recommended quantities are used. Your county agent will be more than happy to work out a simple little chart showing what fertilizer is now being used in the county and how much could profitably be used. The chart could be used for your newspaper ads and in direct mail pieces. A large reproduction belongs in a store display. Such figures make impressive sales arguments.

Psychology of Selling

There's more to selling than weighing out an order for the customer and taking his money, any dealer fully realizes. Those who have a certain knack of making a success of selling are often credited with using "psychology." The psychology of selling recalls the story of two identical candy booths.

In the lobby of a large New York office building are two identical candy booths, selling the same candies and managed by two equally pleasant girls. Yet one always has twice as many customers as the other.

The more successful girl was asked what her magic formula was. "It's all in the scooping," she said. "An indifferent scoop usually puts too much candy on the scales. That means you have to take some of it away, and the customer feels cheated. I'm always careful to scoop too little the first time and then add a little more. The customer thinks he's getting a bonus. It's amazing how business has increased."

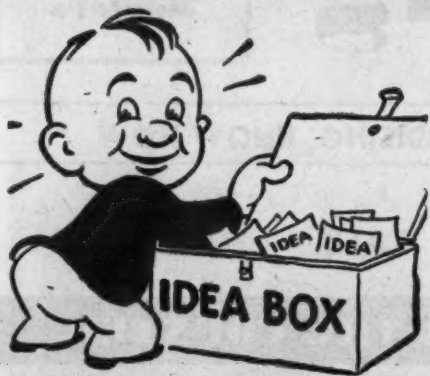
Wyoming Soils Test Low In Phosphorus, Nitrogen

LARAMIE, WYO.—Lack of phosphorus and nitrogen stands out as the most important soil deficiencies that limit Wyoming crop yields, University of Wyoming research agronomists report.

In Circular 57 of the Wyoming Agricultural Experiment Station, "Phosphorus in Wyoming Soils," they report an analysis of more than 7,000 soil samples from cropland in all counties of the state.

Better Selling

Richer Sales Fields for Dealers



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5300—Display

The American Scientific Laboratories announces new packaging for its product, Banarat Bits. Each case of 12 1-lb. bags of this warfarin rat killer is now supplied in duplex shipping cartons. The carton is printed inside and out so as to become a merchandising unit when opened. It is convenient for counter or island display. Secure more complete details by checking No. 5300 on the coupon and dropping it in the mail.

No. 6328—First Aid Kit

Neutralize is the trade name of a product contained in a first aid kit prepared by the E. D. Bullard Co. for use on persons who have come in direct contact with anhydrous or liquid ammonia. Company spokesmen said: "Neutralize, a colorless, odorless liquid, will counteract the effects of ammonia immediately. It is essential only that the product be poured directly into the eyes or over the skin. It is packaged in 4-oz., unbreakable polyethylene. There are 4 bottles of Neutralize in each Bullard ammonia first aid kit. In addition

there are 11 unit first aid packs in the kit, containing such things as gauze pads and absorbent compresses, scissors, eye dressing equipment, and Merthiolate, in the new Uni-Drop dispenser. Complete information for specific first aid treatment of ammonia victims is included in each metal kit." Secure more details by checking No. 6328 on the coupon and mailing it.

No. 6331—Stabilizer

The Velsicol Chemical Corp. has available a new product called Deactivator "E" for stabilizing endrin-parathion dusts. Tests leading to the production of this product were conducted by Velsicol's research department working in collaboration with the American Cyanamid Co. Deactivator "E" is recommended only for use in endrin-parathion blends; it is not intended for use with endrin alone, the company states. The deactivator should be used only with those carriers and diluents that have been tested and found satisfactory by Velsicol chemists. A list of the carriers and diluents, together with formulation details, is available in bulletin No. 509-2 titled: "Suggested Formula-

tions For Endrin-Parathion Dusts." Secure it by checking No. 6331 on the coupon and mailing it.

No. 6330—Spray Method

Developments in the Hose-Mix't spray guns and pellets for pest and plant disease control have been announced by their manufacturer, International Research Corp. The company's method of spraying uses a light-weight, unbreakable gun which attaches to an ordinary garden hose. Normal water pressure will send out a stream 20 ft. or more, it is claimed. A nozzle on the gun makes the spraying action adjustable from a mist to a stream for high shrubs and trees. Chemicals which make a complete spray formula are supplied in pellet form in fiber containers. The Hose-Mix't gun does the mixing. Pellets are poured into the mixing chamber. Secure more details by checking No. 6330 on the coupon and mailing it.

No. 3798—Concrete Floors

"The Care and Maintenance of Concrete Floors" is the title of a 12-page booklet just released by the National Sanitary Supply Assn. The problems of "dusting" and "blooming" are explained and suggestions for overcoming them are outlined. Cleaning, finishing and daily maintenance tips are set forth. The booklet is available without charge and may be obtained by checking No. 3798 on the coupon and dropping it in the mail.

Also Available

The following items have appeared in the What's New section of recent issues of CropLife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6325—Soils Handbook

The Davison Chemical Co., Division of W. R. Grace & Co., has published a 32-page handbook on "Soils, Phosphates and Fertilizers" by Vincent Sauchelli, the company's agronomist. It deals with fertilizer chemistry in laymen's terms, and is addressed, in the author's words, to "salesmen, farmers, and laymen in general to give in simple, understandable language some essential, practical information on the feeding of soils and crops." Mr. Sauchelli discusses kinds of soil, what soils contain moisture supply, water requirements of crops, controlling soil moisture, how plants feed, chemical fertilizers and soil fertility, plant constituents, plant nutri-

ents, humus, commercial fertilizers and soil amendments, secondary and trace elements, using fertilizers, fertilizer materials, phosphates and the relative value of phosphatic fertilizers. Secure the handbook by checking No. 6325 on the coupon and mailing it to CropLife.

No. 6329—Boom

The John Blue Co. has available a new boom for applying nitrogen solutions such as Solution 32. The boom is 21 ft. wide and when used with the Blue model "NSF" solution pump, up to 50 gallons of solution per acre may be applied. The company announcement states: "All solution is carried by hose and all fitting and orifices are constructed of non-corrosive materials. The orifices are spaced every 12 in. to give even coverage and they are designed to give a straight uniform stream to reduce foliage burn when ammonium nitrate solutions are used. Where fan type nozzles are desired it is a quick and easy matter to install them on the boom as all threads are standard pipe size." Boom attachments are available for several of the company trailer type applicators or the boom may be obtained as a separate item for "custom mounting." To secure more complete details check No. 6329 on the coupon and mail it.

No. 5309—Accounts Receivable

"Simplified accounts receivable for retailers" (SARR) is described in a 8-page folder released by Remington Rand. Based on the company's "simplified unit invoice accounting plan" (SUIAP), "simplified accounts receivable for retailers" uses no accounting machines and requires highly trained clerks. It is claimed to provide a complete, accurate and fast method of handling accounts receivable. The method uses Remington Rand's Kollect-A-Matic tray housed in Safe-Ledger equipment for 24-hour protection from fire, and provides an accounts receivable ledger composed of open, unpaid items only a monthly statement for each customer, and a history of each account. Secure literature on this method by checking No. 5309 on the coupon and mailing it.

No. 6322—Nozzles

A line of nozzles for injecting nitrogen solutions, anhydrous ammonia and acids separately or in combinations has been developed by Thackston-Davis Supply Co. The injection nozzles are refinements of basic single-manifold design developed by H. B. Davis, Spencer Chemical Company's South Carolina sales representative. By injecting ammonia solutions approximately 1 in. from the mixer flights they provide better ammoniation than can be obtained from conventional spray pipes. By deflection and diffusion, solutions are brought into intimate contact with the superphosphate and potash. From four to eight nozzles are used, depending on the size of the mixer. Marketed as "DID" (diffusion, injection and deflection) nozzles, the line includes single-manifold nozzles for use of solutions; dual-manifold nozzles, for use of solutions and anhydrous ammonia; and triple-manifold nozzles, including one for utilizing from one to three materials. To secure more complete details check No. 6322 on the coupon and drop it in the mail.

No. 6318—Earth Borer

A new vibratory earth borer that makes a fertilizing hole without moving any soil is now available. Manufactured by the Mall Tool Co. the unit prepares soil for a more effective and economical method of fertilizing trees.

fertilizing trees contained unit co model 2MG gas 7-ft. flexible sh vibrating head. presses the thro tion transmitted shaft into the vi a powerful th bores roughly a 2-3 ft. deep in Holes can even length of the sh poured into the complete details the coupon and

No. 5285—Killer

A new 2-way offer for consum reduced by Dr. H consists of a 1 Hess Warfarat, taining warfarin package of Dr. killer, a liquid r pivally. The co 20¢ saving and mark-up, accor ficials. The pro self-contained opens into a Secure more de 5285 on the cou

No. 5299—Storage

An all-steel feed, fertilizer, phosphate and other materials has been Andrews Mach available in 10 (capacity figur ing 70 lb. per

Send me information on the items marked:

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| <input type="checkbox"/> No. 3798—Concrete Floors | <input type="checkbox"/> No. 6323—Equipment |
| <input type="checkbox"/> No. 5285—Rodent Killer | <input type="checkbox"/> No. 6324—Fertilizer System |
| <input type="checkbox"/> No. 5299—Storage Unit | <input type="checkbox"/> No. 6325—Soils Handbook |
| <input type="checkbox"/> No. 5300 Display | <input type="checkbox"/> No. 6326—Ammonia Converter |
| <input type="checkbox"/> No. 6318—Earth Borer | <input type="checkbox"/> No. 6327—Spray Catalog |
| <input type="checkbox"/> No. 6319—Scale | <input type="checkbox"/> No. 6328—First Aid Kit |
| <input type="checkbox"/> No. 6320—Films | <input type="checkbox"/> No. 6329—Boom |
| <input type="checkbox"/> No. 6321—Portable Sprayer | <input type="checkbox"/> No. 6330—Spray Method |
| <input type="checkbox"/> No. 6322—Nozzles | <input type="checkbox"/> No. 6331—Stabilizer |

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept.

Minneapolis 1, Minn.

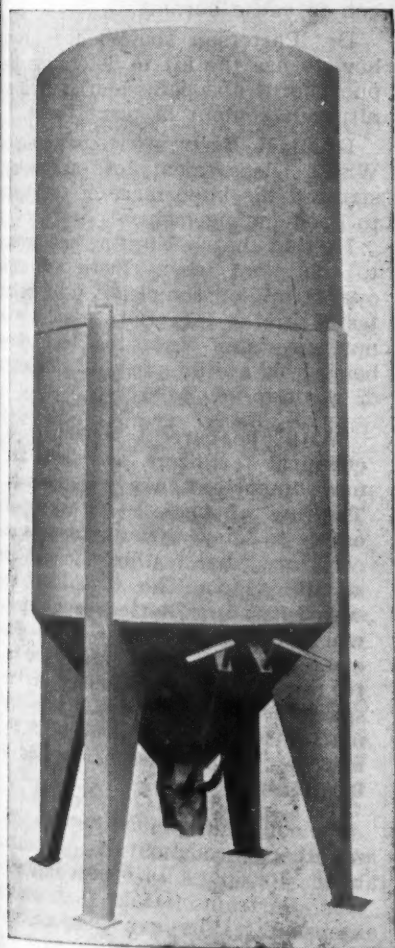
fertilizing trees and shrubs. The self-contained unit consists of the 5½ h.p. model 2MG gasoline engine and a 7-ft. flexible shaft which drives a vibrating head. When the operator depresses the throttle, the rotary motion transmitted through the flexible shaft into the vibrating head becomes a powerful throbbing action which bores roughly a 2-in. diameter hole 2-3 ft. deep in less than a minute. Holes can even be bored the entire length of the shaft. Fertilizer is then poured into the hole. To secure more complete details check No. 6318 on the coupon and mail it.

No. 5285—Rodent Killer

A new 2-way rat and mouse killer offer for consumers has been introduced by Dr. Hess & Clark, Inc. It consists of a 1¼-lb. package of Dr. Hess Warfarin, a cereal bait containing warfarin and a regular size package of Dr. Hess rat and mouse killer, a liquid rodenticide made with pivalyn. The consumer is offered a 20¢ saving and gives retailers a 43% mark-up, according to company officials. The product is packed in a self-contained shipping carton that opens into a 3-color display piece. Secure more details by checking No. 5285 on the coupon and mailing it.

No. 5299—Bulk Storage Unit

An all-steel bulk storage unit for feed, fertilizer, minerals, rock phosphate and other free-flowing materials has been developed by the Andrews Machine Co. The unit is available in 10- or 25-ton capacities (capacity figured on material weighing 70 lb. per cubic foot.) and is



fabricated in one unit on four legs, eliminating any assembly on delivery. The unit has a hopper bottom with a sliding control gate (not a sliding valve) for more effective discharge control. The bin is made of 12-gauge steel with 16-gauge steel used for the top. An 18 in. manhole and cover for loading are located on the top with a ladder leading down the inside for access into the bin. Company officials said the unit serves companies selling in bulk to provide to their customers and manufacturers storing ingredients. Check No. 5299 on the coupon and mail it to secure more information.

No. 6324—Fertilizer System

Now being demonstrated in various parts of the country is the new Flo-Mix system of fertilizing crops and pastureland. Organized to manufacture applying equipment, supply the basic fertilizer ingredients and to set up distributorships for Flo-Mix is the Flo-Mix Fertilizer Corp. The Flo-Mix principle is to mix the three essential ingredients—nitrogen, potash and phosphorus—on the applying equipment in the field as it is being applied into the ground. All ingredients are in their liquid form, utilizing anhydrous ammonia, phosphoric acid and potash. A setting of special dials regulates the mixture and determines the proportion of the various ingredients. The manufacturer notes numerous advantages of mixing a complete fertilizer in solution at the point of application and covers these points in an illustrated folder which is available to interested persons. The folder also describes the Flo-Mix equipment, including the Nitri-Flo trailer tank, Phos-Flo and K-Flo tanks and applicators. For more complete information check No. 6324 on the coupon and drop it in the mail.

No. 6321—Portable Sprayer

A portable sprayer for such solutions as insecticides, fumigants, emulsions, deodorizing liquids, oils, polishes, floor dressings, moth proofers, and glass cleaners is now available from Spraying Systems Co. This new sprayer was designed for use in commercial plants. The No. 6000 sprayer, as it is called, weighs 1½ lb. and can be held and operated with one hand. It's supplied complete with unbreakable plastic jar that is easily refilled by unscrewing from the cap. A companion unit, the No. 5870 chlorine sprayer, is identical to No. 6000, except that all metal parts that come in contact with chlorine solutions are made of stainless steel. To secure more complete details check No. 6321 on the coupon and mail it.

No. 6323—Applicating Equipment

The line of anhydrous ammonia applying equipment offered by the Dempster Mill Manufacturing Co. is featured in a new descriptive folder produced by the company. The folder illustrates and describes the various models of Liquijectors and reveals considerable information on the new Dempster Liquijector metering pump. The several types of Liquijectors include those mounted on the new Dempster Model 500 tool carrier and those which can be tractor-mounted. The simplicity of the dial setting and ease of lubrication are claimed to be two major features of the new metering pump. Completely visible and accessible from the outside, the dial can be quickly set without tools. All lubrication points are easily reached and the problem of remote control equipment on the meter has been eliminated by the use of a simple on-off clutch system, the literature explains. For a copy of the new booklet and other information check No. 6323 on the coupon and mail it to Croplife.

No. 6319—Scale

A new type automatic scale which is claimed to weigh sticky and non-free flowing materials as accurately as dry aggregate materials, has been announced by Richardson Scale Co. A differential scale, the new unit automatically and continuously delivers a selected amount of material, the weight of which is the difference between a fully loaded and partially loaded scale. Called a weigh-in and

(Continued on page 13)

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Umbaugh Agricultural Chemical Co., Memphis, announced plans to erect three fertilizer plants, to cost \$10 million, at Walsenburg, Colo. The plants will produce anhydrous ammonia, phosphoric acid and ammonium sulfate phosphate.

Raising corn by modern methods more than doubled yields and nearly tripled returns over methods used 30 years ago in a demonstration conducted on a Red Wing, Minn., farm. The "corn today" yielded 123 bu. an acre and returned \$90 an acre, compared with a 59 bu. yield and \$35 return for the "corn yesterday."

In its annual fertilizer situation report the U.S. Department of Agriculture estimated that supplies of the three principal plant nutrients in 1955-56 would exceed the 1954-55 supply by 2.5%. USDA made these estimates: 2.35 million tons of nitrogen, 4.4% more than the 2.25 million tons in 1954-55; 2.3 million tons of available phosphoric acid, little change; 1.94 million tons K₂O, an increase of 4.3% over the 1.86 million tons a year ago.

Lamar Ratliff, 16-year-old Mississippi 4-H clubber, raised an official yield of 304 bu. an acre on his corn plot.

Traffic experts in the fertilizer field said that the new rates announced by Interstate Commerce Commission on trainloads of commodities from one shipper to a single consignee, will not likely apply to fertilizer. However, it was regarded as a "foot in the door" which might lead to better rates in the future.

Food and Drug Administration used its five-man advisory board to establish a tolerance of one part per million on U.S. Rubber's Naugatuck Division pesticide, Aramite. This was the first time the committee had been called into play. . . . The American Potash Institute, Washington, D.C., observed its 20th anniversary. It was launched in 1935.

Agricultural losses suffered during the August floods in Connecticut, Pennsylvania and New Jersey totalled \$5 million, it was announced. Crop damage was the largest single item, being figured at \$2.8 million.

New appointees to industry positions included John E. Fletcher and L. Ralph Boynton who were promoted to new sales posts by U.S. Potash Co.; Robert J. Engelhardt, who was named vice president for J. C. Carlile Corp.; John W. Crowther, promoted by Frontier Chemical Co.; and Laurance S. Rockefeller was named to the board of Olin Mathieson Chemical Corp.

The Federal Food and Drug Administration increased fees for the setting of tolerances for pesticidal chemicals, stating that the former charges did not pay their way. In some categories, the fees were doubled. . . . Stauffer Chemical Co. announced plans to merge with Consolidated Chemical Industries, Inc.

An Indian fertilizer firm, Fertilizers & Chemicals, Ltd., Travancore, India, called for tenders for the supply of manufacturing equipment. Cost of the proposed new plant is \$6 million. . . . California Spray Chemical Corp., Richmond, Cal., announced that it will build a \$1.5 million captan plant in France. Production is scheduled for the fall of 1956.

The Corn Belt Agricultural Ammonia Conference, held at Urbana, Ill., was told that full fertilization could add a billion bushels to midwest corn production. Some 700 persons registered for the meeting.

The Interstate Commerce Commission, in granting train load rates for bulk commodities when shipped by a single shipper to a single consignee, raised speculation in the fertilizer trade as to whether this principle might be applied to the plant food shipments.

Dr. G. L. Bridger, formerly of Iowa State College, has joined the Davison Chemical Division of W. R. Grace & Co. as director of agricultural research. . . . Kenneth A. Keith was named to a new position by Spencer Chemical Co. Formerly connected with the sales department and a market analyst, Mr. Keith was made manager of agricultural chemicals market research.

Southern Nitrogen Co., Inc., a newly organized firm, announced it would build a \$14 million nitrogen plant at Savannah, Ga. Officers of the company include Malcolm Smith, chairman of the board, John R. Riley, president, and George V. Taylor, vice president.

Western States Chemical Corp. will begin manufacture of complete pelleted fertilizers in a new plant now under construction at Nichols, Cal. The company has been organized as a subsidiary jointly owned by Pacific Guano Co., Berkeley, Cal., Triangle Company of Central California, Salinas, Cal., and Wilbur-Ellis Co., San Francisco.

Flood damage in the northeastern states was calculated in billions. Hurricane "Diane" brought winds and rains that ruined crops, killed livestock and devastated whole areas of New England. Flood insurance was reported to be practically non-existent, thus adding to the difficulties of both farmers and businessmen. . . . A European chafer quarantine was applied to include parts of Connecticut, New York and West Virginia. . . . Grace Chemical Co. named John B. Pitner as head of its Agricultural Service Dept.

Monsanto Chemical Co., St. Louis, announced a special sales staff within its Organic Chemicals Division to market farm chemicals which the company will market for the first time under its own label in 15 Midwest states. Charles P. Zorsch, associate manager of the division's Agricultural Chemicals Dept., heads up the new farm chemicals section within his department.



Rotund Oscar Schoenfeld, the thrifty one, came to work at 6:30 a.m. although he knew that no one else would be at the fertilizer store until the usual opening time—7 o'clock. There was a reason for Oscar's early appearance. He had just gotten back from a week's vacation in western Iowa, where Minnie and he had visited with her brother, whose wife had died recently.

Oscar had not enjoyed that vacation. All the time he kept worrying about the fertilizer business. He worried lest his partner, Pat McGillicuddy, go on a spending spree. It was Pat's nature to be generous and happy. He was a sales promoter—always looking for ways to sell more merchandise, but, thought Oscar, someone always had to watch the costs.

And Oscar certainly knew how to do that. Why last year he had retrieved 15 pounds of paper clips from wastebaskets in the office, and over 900 rubber bands. Besides he had never missed a discount. Those things added up.

"Let them be big and try to put on a big front," Oscar said contemptuously,

WHAT'S NEW

(Continued from page 11)

weigh-out scale, the new unit is made up of a weigher, dial scale and totalizer. The weigher, consisting of a weigh hopper mounted on a short belt conveyor, is suspended from levers terminating in the dial scale. The belt conveyor provides a live-bottom for the weigh hopper, and facilitates the discharge of the hard-to-handle material. Heart of the system is the electronic controls. Secure more details by checking No. 6319 on the coupon and mailing it.

No. 6326—Ammonia Converter

The J. C. Carlile Corp. has available detailed information concerning its new portable ammonia converter. The firm develops and produces a line of portable ammonia converters for the production of aqueous ammonia wherever desired. Company spokesmen say efficiency approaches 100%. Check No. 6326 on the coupon, clip and mail it to secure more complete information.

No. 6327—Spray Catalog

Catalog No. 30 has just been published by Spraying Systems Co. It covers spray nozzles and accessories for all types of farm, ranch, orchard and garden spraying. The 20-page catalog includes illustrations, description and spraying data on all types of nozzles for boom spraying, broadcast spraying, hand spraying and airplane spraying. Information on accessory equipment is also included, such as adjustable valves, strainers and spray guns. Included in the catalog are tables for calculating field coverage of chemicals in terms of gallons per acre and gallons per minute. Secure the catalog by checking No. 6327 on the coupon and mailing it.

As Oscar looked over the correspondence and the expenditures, his lips tightened. He'd shake his head, bite his lips. "Ach, too much advertising . . . and he's ordering too many calendars . . . the telephone bill is too high . . . we've got to cut it down. Himmel . . . a dinner for a supply salesman, \$2.75. Is Pat crazy? The salesman should buy Pat's dinner. Not us buy his . . . Ach . . . good thing I came home. In another week we would be broke . . ."

He turned and saw a new portable radio on a counter. Frowning he inspected it, saw a sticker which said, "Downing Electric Shop."

Oscar's face went white. We don't need a new radio! he howled, as though Pat were listening. "The old one is all right for those weather reports. Ach, he's still got that, too. I'll fix it."

He grabbed the telephone and called the electrical shop. "Duke," he said to the owner. "There's a portable radio up here with your sticker on. Must be a mistake. We didn't order a radio."

"Hi, Oscar," said cheerful Duke Downing. "So you're back, eh? How's the Iowa corn?"

"The Iowa corn is all right, but it's been dry out there," Oscar said coldly. "But about this radio. Come and get it."

"Wait a minute," suggested Downing. "Pat ordered it. I delivered it last night. There's a big promotion coming off at your store Friday."

"Promotion!" Downing said. "That's right," Downing said. "Pat is having John Carlson down to the store. It's Carlson's 90th birthday and all his friends can come and see him at your store. Pat and you are giving him that portable radio."

"I was afraid of that," Oscar snapped. "I can't step out of this place for one minute but what that Pat spends like a politician with a big slush fund. Come and get that radio. We don't want it." And he hung up.

As Oscar's thoughts seethed riotously, Tillie Mason, the bookkeeper, and Pat McGillicuddy came in laughing and quite happy.

"Hello, Oscar," greeted Pat warmly. "Glad to see you back."

"I'll bet you are," Oscar said sharply. "Spending, spending, spending. We don't need that new radio. The old one is good enough. And I don't believe in giving radios away. It's got to go back."

Pat's good nature slowly evaporated. His face became a little grim as he took off his coat and hat, hung them up. Then he went to his desk and sorted papers aimlessly. He was visibly disturbed.

"Oscar," he said, "it's all part of a promotion that will bring us more business."

"I heard about it from Downing," Oscar said icily. "I told him to come and take the radio back."

"But you can't do that," Pat said

angrily. "He's in on the deal. Didn't he tell you?"

"I didn't give him time," Oscar said sharply. "I heard enough. I hung up after I said what I wanted to say."

Pat sighed and shook his head. "Oscar, Oscar, when will you learn how to handle people? They have the same feelings as you have. It pays to be courteous to win friends."

"Do friends help us pay our men every Saturday?" Oscar asked logically. "Do they discount our bills for us?"

"In a way—yes," Pat explained slowly. "Our friends, even if they are not farmers in every case—recommend us to farmers. Those friends speak well of us. Farmers hear that and come here to buy. Those business friends of ours also help us put on community promotions."

"We don't need more promotions," Oscar said. "We need more collecting." This last was a direct shot at Pat who was supposed to do this collecting.

"Oscar, give this promotion a chance," Pat said. "Downing is selling us that portable radio at wholesale cost for this promotion and also contributing \$10 of the cost if we put up a sign mentioning him. That means we have to fork up only \$10 for the radio. And Carlson will be very happy with it. I understand he's an avid sports fan, likes baseball, football and basketball games. Likes it on real loud. Now with his own set, he can go to his bedroom and open her up and enjoy himself at those games."

"Why," growled Oscar, "do we have to put on a birthday celebration for a farmer 90 years old? Why can't his relatives do that? Why should it cost us money? And how does it help us sell fertilizer?"

Once more lanky, blue eyed Pat sighed. "Oscar, we are doing this for a number of reasons. First, because this firm believes any farmer who lives to be 90 should be honored, and our customers like to see us do this."

"Secondly, it is good promotion. The newspaper will give us a picture and story on this idea, and that will be worth more than the cost of the promotion. On my own tape recorder I'll have Carlson tell about early day farming. And as other 90 year old farmers will be honored, I'll put them on tape. Then we'll have this record of their experiences and we'll play it at some farm meetings at the store."

"More farmers. More celebrations. More radios. Ach du lieber. Let me out of here and get some fresh air. And maybe I won't come back."

Slamming the door behind him, Oscar strode angrily into the warehouse.

"Oh, Mr. McGillicuddy," moaned Tillie Mason, the plumpish bookkeeper. "It's only 7:30 and I have to take an ulcer powder. I had almost forgotten how much you and Oscar fight."

"That's it," Pat said a little sadly. "When Nora and I fight and make up, I can always kiss her and feel better. But who in the world could feel better kissing Oscar?"

Importance of Soil Tests Stressed at Turf Conference

PULLMAN, WASH.—A test kit to help lawn owners and greens-keepers diagnose plant troubles was demonstrated by Dr. J. K. Patterson, Washington State College agronomist, at the ninth annual Pacific Northwest Turf Conference, held here recently.

Dr. Patterson said tissue test kits have been developed by various colleges and commercial concerns in the last 20 years. They enable greens-keepers to measure the level of nitrogen in the plant tissues as a guide to rates and time of applying nitrogen fertilizer, especially in the summer.

The tissue tests, Dr. Patterson said, were developed as a result of studies to find the cause of leaf-tip burning and the growth of disease organisms in the turf during the summer months.

Researchers found that water from the plant was forced out of the leaf tip during warm nights and that this water carried a considerable amount of nitrogen. As the water evaporated, the high concentration of the chemical left in the plant leaves resulted in some leaf burning.

By use of plant tissue tests, greens-keepers are able to withhold nitrogen fertilizer until just before the plant develops a nitrogen deficiency. They then supply nitrogen at low enough rates so that it meets the plant's need but does not leave excess nitrogen to cause burning.

Dr. Patterson showed the group how to use the kit to determine the phosphorus and potassium as well as nitrogen content of plant tissue.

Dr. B. R. Bertramson, chairman of WSC's department of agronomy, stressed the importance of soil tests to good management.

He said that soil testing has grown to the point where there are now over a million samples a year being tested in the U.S. But he said it is not surprising since the tests now being used are the result of 100 years of work in soil science.

With the current popularity of chemical fertilizers, soil tests are more important than ever, he said. The use of tests is necessary if one is to know with any degree of certainty what fertilizer to put on an ailing lawn. This should not be surprising, Dr. Bertramson noted, when one considers that 100 lb. dry matter may be taken from 1000 sq. ft. lawn in grass clippings in the space of one year. He said this dry matter is the equivalent of 5 lb. nitrogen, 2 lb. phosphorus and 4 lb. potash.

The soil testing laboratory at WSC and others throughout the state make about 10,000 soil tests annually.

Dr. Bertramson said that county extension agents can instruct laymen in how to take soil samples and send them to the laboratory for testing. He compared Washington citizens who suffer along with ailing soil but do not take advantage of the testing service to the man who suffered from thirst in his front yard although he had a well out back.

CHEMICAL FIREBREAK

The use of soil sterilants to kill weeds around granaries, oil and gasoline storage units and other farm structures is an excellent way to make a firebreak, according to John Zaylskie, North Dakota Extension Service forester.



The most effective phosphorus on a lawn when making a new stand.

Mr. Amburgey broadcast 150 tons of Old stands of O. each year, this can be broken stand.

A new treatment (stinking) smut come as well as been recommended for the new treatment help the area at least as far as smut is concerned.

Hexachlorobenzene chemical used in recommendation of 40% H at the rate of higher rates and will not be applied as a dust. Dr. C. S. Hurd, U.S. Department of Agriculture, Washington State, the new treatment research and find how the new reduces the incidence of originating from they said. The specific for which

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FARM SERVICE DATA

Extension Station Reports

The most efficient way to use phosphorus on alfalfa is to apply it when making the seedbed before planting new stands of alfalfa, according to Lyman Amburgey, extension soils specialist at the University of Arizona. Adding phosphorus to alfalfa increases the yield on most Arizona soils.

Mr. Amburgey advises farmers to broadcast 150 to 160 lb. P₂O₅ an acre before plowing or disking the field. Old stands of alfalfa need 50 lb. P₂O₅ each year, Mr. Amburgey says. This can be broadcast or drilled into the stand.

A new treatment for common (stinking) smut that will control soil-borne as well as seed-borne spores has been recommended by plant pathologists for the Pacific Northwest. The new treatment, they say, may help the area drop its dubious title as the smut capital of the country—at least as far as common or tall smut is concerned.

Hexachlorobenzene (HCB) is the chemical used in the new treatment. Recommendations call for the application of 40% HCB in a slurry treater at the rate of one ounce per bushel. Higher rates are even more effective and will not injure the seed, the pathologists say. HCB may also be applied as a dust.

Dr. C. S. Holton and Dr. L. H. Purdy, U.S. Department of Agriculture plant pathologists stationed at Washington State College, released the new treatment recommendations. Research and field trials in the area show the new method markedly reduces the incidence of common smut originating from soil-borne spores, they said. The new treatment is a specific for wheat smut, however.

Colorado A&M scientists have obtained excellent control of western harvester ants using bait poisoned with heptachlor. The bait shows promise of being cheap enough to use in large-scale control programs on rangeland, possibly with aircraft.

If tests now underway by Dr. George List, entomologist for the experiment station, are successful, the bait may help bring back into production thousands of acres of western rangeland stripped by the ants.

Concentrations of one part of the chemical, heptachlor, to 400 or 800 parts cracked wheat gave nearly 100% kill of the ants in the A and B tests. Five grams of bait per colony was enough to do the job.

The cracked wheat bait is important. It should be small enough to pass through a 20-mesh screen. The idea is to fool the ants into thinking the poisoned bait is range plant seed. They store seed in fantastic quantities in their eight-to-ten-deep nests. Scientists say this is how they do their worst damage—robbing rangeland of its scarce seed for revegetation.

In the tests Dr. List has found no injury from the baits to birds, rodents or other wildlife and range animals.

Improved pastures and rangeland when properly fertilized, can produce more than twice as much beef per acre as that produced on unfertilized land, according to the California Fertilizer Assn. The association reported on data developed by the

U.S. Department of Agriculture and the fertilizer industry.

On one improved pasture, commercial fertilizer assured production of 309 lb. beef per acre, compared with 138 lb. on the unfertilized pasture. The residual effect of the phosphate applied carried over through the next year to a noticeable extent.

Dry range land in California was productive of even greater contrasts. Range in Tehama County to which 400 lb. 16-20-0 was applied to each acre produced 127 lb. lamb per acre compared with 11.6 lb. in each unfertilized acre, a net gain of 115.4 lb. per acre.

In San Mateo County, the same fertilizer application produced 337.4 lb. of beef per acre, while the unfertilized field was producing 42 lb., a net gain of 295.4 lb. per acre.

A dust for control of sheep ticks.—1½% dieldrin—gives complete control after one thorough treatment, according to Robert Pfadt, entomologist at the Wyoming Agricultural Experiment Station. Mr. Pfadt says its "complete effectiveness" is due to two reasons: (1) It acts as a tailor-made poison for sheep ticks and (2) it stays in the wool long enough to kill the young ticks as they hatch.

Amino triazole is showing promise as a poison oak killer in tests conducted at the University of California in Davis. It also has been effectively used against sandbar willow, according to Oliver A. Leonard, of the University's Davis Campus. Amino triazole is more selective than present poison oak killers—2,4-D, 2,4,5-T and oil sprays—and may prove safer to use in areas where ornamentals grow nearby, says Mr. Leonard. Further tests are scheduled this year to determine that amino triazole permanently kills the pest.

Nitrogen applied to soft white wheat in the Columbia Basin not only can boost yields but can improve quality—up to a certain point.

And that point is when yields level off, reports Albert S. Hunter, Oregon State College, and U.S. Department of Agriculture soil scientist. He says any nitrogen added after yields have reached their peak will increase protein content, perhaps to undesirable levels.

Pasture Output Boosted

AFTON, WYO.—Results of a 3-year study by the Wyoming Agricultural Experiment Station at Afton on the effect of pasture fertility on milk production have shown that the carrying capacity of a bluegrass type of permanent pastures can be increased as much as 50% by applying commercial fertilizers, and that returns from the increased milk yield per acre were greater than fertilizer costs.

HORTICULTURAL MEETING

WENATCHEE, WASH. — Washington fruit growers will take a half-century look ahead at the 51st annual convention of the Washington Horticultural Assn. in Wenatchee, Dec. 5-7. Marketing problems and their expected solution over the next 50 years will be given special emphasis at the convention.

Better Selling

Richer Sales Fields for Dealers

Proper Display and Use of College Reports and Magazine Articles Can Help Pep Up Sales

By AL. P. NELSON
Croplife Special Writer

Some of the fertilizer dealer's best sales promotional ideas can be secured from the farm magazines and the department of agriculture reports which come across his desk. Contained in these reports are authentic facts which the fertilizer dealer can use handily to promote more business for himself and more productivity for the farmer.

Take, for example, a report from the Wisconsin State Department of Agriculture which says, in effect, that farmers used about one and one half million tons of ground agricultural limestone.

In itself, this is just a report, but the news release goes on to say that "Wisconsin farmers could use consistently more agricultural lime than the current consumption. It has been estimated that 15 to 20 million tons would be needed to bring our cultivated acreage to proper neutrality. It then requires at least 2 million tons a year to maintain this proper soil condition."

All right, this means that fertilizer dealers in Wisconsin have a big market for lime. They can play up this agriculture department report in newspaper ads, signs, etc., and go out and campaign to sell lime. Armed with such a report you can readily see that they will get many farmers thinking about the lime problem.

If the farmer is going to buy lime and have it applied on his land, then most certainly his mind is conditioned to the buying of fertilizer, too, or at least in placing an order for future use of the material. As long as you get him to thinking about improving the condition of his soil, you are going to profit and he'll get considerable benefit.

In talking with a lot of fertilizer dealers I find that many of them have clipped material in their files about fertilizer values. Some of them have the latest farm magazines in handy racks with fertilizer news and articles marked in red crayon. But very, very few dealers are using this material effectively, namely in advertising and in signs.

It may be true that you are an authority on fertilizer and so are the salesmen you buy from. But the customer knows you are primarily interested in selling. He may not accept all the facts you give him; he will shut his mind to some of them.

But when he finds—through your help—that disinterested parties in the sale, such as state departments of agriculture, magazines, etc., advocate the increased use of fertilizer, the prospect will open his mind to admit and consider such evidence.

Not that he shuts his mind to all your sales talk. But if you can get him to consider other authentic sources of material, too, it will help you to sell and you are wise to explore such possibilities.

When you see a newspaper item or magazine article by an authority clip it, put it on a large cardboard sign, paint an attractive headline and stick it right above or near the product it is advertising. If you do, then you tie in with such educational material, and you add weight to your own sales promotional material.

Want to sell chemicals in the winter? I recently saw a report from a state college experiment station declaring that the best way to control brush growth on stumps is to spray during the winter season. It stated that treatment during the winter is particularly wise where it must be used near sensitive crops like legumes. They are less likely to be damaged by spray drift during dorm-

Dealer Clinic

any than when they are in growth.

The specialist advises spraying each stump after it has been cut close to the ground. He also advises a follow up stump treatment as a foliage spray next summer to the regrowth that appears.

Pictures and signs and a little advertising during fall and winter months can sell some of this brush killer for you, bring more farmers into your store for visits and purchases. And through such visits you perhaps can get extra orders for spring delivery on fertilizer.

Remember, the sale of even a small can of farm chemical can sometimes result in future sales of sprayers, more chemicals and also set up a buying relationship which can be very profitable. Don't think in terms of just one sale and one profit; look ahead to the making of many regular buying arrangements.

Bindweed Control Discussed at Field Day in Texas

ROBSTOWN, TEXAS — Bindweed has been spreading steadily in the Coastal Bend area, but farmers now think they can stop it before the infestation becomes serious. It is not yet as bad as in the Texas Panhandle, said R. E. Nolan, Nueces County agent.

He made a recent trip to the Panhandle and was told that 32,000 acres are infested with bindweed, and that it can be found on 28% of the farms in that area.

In order to acquaint local farmers with the seriousness of bindweed, he and D. P. Pawlik, San Patricio County agent, sponsored a field day with farmers to discuss bindweed control.

The present infestation in the two counties covers about 1,500 acres, but could spread fast unless strict control measures are started. Mr. Pawlik explained how the weed spreads by telling of an experiment in a Panhandle experiment station where one half million seed were produced on one acre of wheat. And along a roadside ditch the weeds produced seed at the rate of over four million seed per acre. He said the seed could lie dormant for years until proper moisture conditions germinated them.

Though the threat of bindweed is serious, Mr. Nolan says there is one thing in favor of eradication. Farmers are aware of the danger of allowing bindweed to spread, and they are attempting to bring it under control while it is confined to relatively small areas.

HOW TO MAKE A PROFIT

(Continued from page 9)

more through sight than through all of the other senses combined. Good window displays produce high returns because they make people stop, look and buy. Clean store front, window displays and a clean store all contribute to that clean look which customers like and associate with business efficiency and success.

The National Cash Register Co. reports the findings of many studies to determine what attracts people, as follows:

Eye, 87%; ear, 7%; nose, 3.5%; hand, 1.5%; tongue, 1%.

Dress up the "eye" appeal of the store. It costs little and returns so much.

Recently, I read the following statement which I believe could be applied to farm supply stores with amazing results. "Curiously enough, the most fertile source of new ideas and better methods is not from competitors, but is to be found in what others in different lines of business are doing."

Nearly every dealer, the country over, would be repaid a thousandfold by taking the time to visit some of our wonderful super markets in the larger cities and study their display advertising, departmentalization, store layout, illumination, etc.; then apply these methods to their own businesses.

The financial requirement of any business depends upon its volume of operation, method of doing business, sales program, cost of operation, efficient management, and use of capital involved in credit, inventory, promotion, advertising, etc.

Money and credit are most important in every business regardless of size. Most fortunes are made with borrowed money. Companies sell stocks and bonds; farmers secure mortgages on their property. Both are raising money with which to purchase land, buildings, equipment or perhaps to provide or protect their operating funds.

Borrowed money used wisely becomes a stepping stone to success. But credit out of control will destroy any person or business organization.

The bases for considering credit are:

1. Character.
2. Capacity (or volume).
3. Capital.
4. Conditions (pertaining to the particular industry in which the company is engaged and also with general business).

The nature of credit has always been:

1. Barter.
2. Money.
3. Credit.

To give a full understanding of the term "credit," we will refer to the definition of credit.

Credit—"A right or privilege by means of which one party may use or have at his disposal the use of money, goods or services of another for a limited time and for an expressed or implied consideration." If you lend a party money, it becomes "lost" for any purpose of your own. Yet nothing so cements and holds together all the parts of a society as faith and credit.

Credit plays an important role in business, stimulating the use of products of agriculture and industry through the various steps of production, distribution and consumption. Back of the movement of goods is the energy of credit which gives its impulse to each step toward ultimate use and enjoyment.

Credit derives from confidence based upon historical facts, operating and financial information on millions of manufacturers, wholesalers

and retailers who comprise our national system of distribution.

Current information on all phases of business flows into the offices of credit organizations daily, such as, Dun & Bradstreet, retail credit associations, banks. Trained credit men are studying reports and furnishing information on individuals, partnerships and corporations throughout the U.S. and Canada to protect the capital used as credit—to make it safe and profitable.

Step by step there has grown up in the U.S. well defined principles of credit which we speak of today as credit management. The successful application and administration of these principles call for intelligence of high order, business management, law and human relations.

Modern methods, research and statistical information, have made present day credit management almost a science.

Credit and collections have become an important part of business, both wholesale and retail. There are good reasons why this is so and why it is likely to become more important each year.

Advantages of Credit

Credit plays a vital part in the modern business world. Approximately 90% of the total payments for goods in the U.S. are made by checks. The amount of business transacted with silver, coins and paper money appears very small.

Several advantages of this credit system may be noted:

1. Wide use of checks greatly reduces the actual shipment of money from place to place. Checks also act as receipts.
2. The mechanics of credit permit offsets to be made and thereby reduce the amount of money required in circulation.
3. Credit enables the excess funds of excess producers of money today to be used today, and later repaid by excess money producers of tomorrow.
4. Merchants accumulate goods which are sold on credit for present use and for which settlement will be made later.
5. Banks accumulate the excess funds of many customers—the owners of money—and lend large and small amounts to active borrowers who will use these borrowed funds in their business today and repay from their excess money when due.
6. Through this service in the movement of goods from manufacturer to dealer and dealer to consumer, credit has helped make possible modern, large-scale production, distribution and widespread division of labor.
7. Present day process of distribution, both wholesale and retail, is largely dependent on the mechanism of the various forms of credit.

Credit Management

Let us analyze briefly why credit management is a must in business of all kinds.

1. Trade conditions do not remain the same. Whether they move up or

down, there is a point where they will turn abruptly. Therefore, the price of success depends upon gathering information and making proper credit decisions.

2. We are living in an age of decreasing margins of profits which does not allow for long-time credit. To earn a satisfactory profit on invested capital, the dealer must turn his stock rapidly and keep turning it. Dealers must be taught to take advantage of all cash discounts, to sell for cash and use extreme care in making credit sales. The dealer must collect his money promptly so he can buy and sell more merchandise.

3. Costs of doing business must be given far more study and be controlled more efficiently in the future. Compensation of officers and personnel must be carefully administered; their earnings depend upon the earnings of the business. Profits will be reduced in direct ratio to credit losses and inactive capital, because there will then be a smaller amount of gross business out of which to pay overhead costs of doing business.

Different people have different ideas as to what is a good credit risk. Bankers place great stress on financial standing. They want accurate financial statements; they want to know how you pay your bills.

Manufacturers want financial statements, also, but because of the close relationship with the dealer, they take a little greater degree of chance on the dealer's character, capability, reputation, etc., in the past. He knows that a good dealer of good character will usually make up in hard work, ideas, cooperation, loyalty and efficient merchandising what he may lack in work capital.

For a dealer to earn and merit a good credit reputation enjoyed by so many businessmen today requires years of honest dealings, attention to business, satisfactory handling of his accounts according to terms, and other similar factors.

To destroy that reputation may require but one day. One unwise financial move, carelessness, or false report can completely tear it down.

Mere opinions count for very little in determining a credit policy or the limit of credit to a customer. Facts are what count. That's what the manufacturer wants—that's what the dealer wants.

The man who approves credit for the manufacturer or the dealer is just as much interested in approving an order as the salesman who writes the order. He does not get paid for orders turned down but for profitable business which he helps in building up. Credit policies must go hand in hand with sales policies. Credit managers want to help the salesmen sell; however, in many cases the salesmen will not cooperate, they fail to give factual information.

Under present day methods of sales and deliveries from the dealer to the customer, the salesman or dealer salesman generally sees the farmer more often than the dealer. The same is true with territory salesmen or managers for the manufacturer.

The salesman sees the customer in the store or on the farm and can render valuable service by reporting on conditions that he finds in either case. The salesmen can accurately

appraise conditions, management condition of animals, salable condition, possible date of sale. He can advise on how purchases on the farm are made on other items other than what is handled by the dealer.

For some unknown reason, dealers hesitate to get financial reports from farmers in too many cases. A dealer should check with his local bank credit agency and other reference to see whether the new customer buys for cash or asks for credit.

A complete credit file should be kept up to date in all dealer stores. Some day, a cash customer may ask for credit and the dealer should be able to say to Mr. Jones, "Just a moment, let me look at our file." Or he should know who to ask whether or not Mr. Jones was eligible for credit. Many hundreds of thousands of dollars are lost each year by retail dealers because credit has been extended to people who cannot pay for what they have purchased.

Always remember that credit is your money or merchandise being used by someone else. It is your money. Protect it and use it wisely.

Some dealers are reluctant to use banks as a source for money needed in their respective operations. Dealers should work closely with the local banks. Every dealer should solicit his banker's cooperation in working up an approved list of farmers whom the bank will extend credit when needed. Further, manufacturers should cooperate with all dealers to assist them in the presentation of a request for credit from the bank instead of exhausting their own working capital in the extension of credit.

Many, many times we have found that that same banker who the dealer or manufacturer thought was unwilling to go along in the extension of credit was perfectly willing to extend credit to reliable people of reliable operations. But no one has given the banker the complete story substantiated by facts and figures.

Invite your bankers to conventional meetings, etc., where sound educational, management and fertilizer programs are presented. This will give them the opportunity to learn about your program.

Terms of Sale

Terms of sale should be fully understood by all employees.

1. Cash sales
2. Quantity discounts
3. Open accounts
4. Open—pay upon receipt of invoice
5. Sight draft
6. Arrival draft
7. Open—cash discount—7 to 10 days
8. 30-day accounts
9. Trade acceptance—30/60 days

Whatever the terms, the accounting and credit departments should fully understand their meaning. They can cooperate with the sales department.

Too often we find both manufacturer and dealer very careless in control of credit, allowing accounts to age beyond the period of efficient use of working capital.

Cash or 30-day credit means that, not 60 or 90 days.

Every dealer and manufacturer should have a weekly or monthly report system on each credit account which would give the name, amount of credit extended, balance owing and if it is 30 days, 60 days or 90 days or older. In other words, the true status of all accounts on a credit basis.

If \$100,000 is involved in credit with one dealer, and if budget of \$100,000 is based on day terms but 1/4 or 3/4 of amount is over 30 days old, additional working capital must

FERTILIZER MAKES THE DIFFERENCE

ST. LAWRENCE, TEXAS—Farmers in the St. Lawrence community have been saved from ruin by two things—irrigation water and fertilizer. After getting their irrigation wells, the owners found they could make enough cotton for a living. The fertilizer proved the difference between a mere living and a good profit. The community was carved out of a large ranch in 1946 and the 320-acre blocks sold to ex-GI's as farm land. Here is the way I. P. Hoelscher explained it: "We were growing a bale to the acre without fertilizer. But this is not enough with present cotton allotments, so a few fellows started experimenting with fertilizer. This is our second year to use it, but several farmers will produce two bales to the acre. Next year everyone will be using fertilizer in bigger quantities."

to the business money.

Earnest effort and sales, but weakness is displayed (credit).

It is not unusual for just a few who would want to use credit go to commercial policies are enforced.

Loose credit is few for their any benefit (them) continue industries.

The original credit in any business maintain health.

Where unwise employed, they markets which or the supplier.

There is a demand for credit program for credit farm supply business.

1. Select your Don't let him. Get a

2. Build an ing about ship, especially is to be made

3. Follow-up collection sure the payment is

4. Secure motions where dicate the tion.

We recommend points be considered

1. Sell for cash

2. Sell on short only when

3. Set up fixed of interest counts.

4. Charge a on all long with bank

5. Develop a banker pro area.

6. Develop a for sales employees credit.

8. Develop a between how to money.

Business Manager Form

1. Worry about there is no app think any cost saving.

2. Pare your low profit operation that today's price high.

3. Analyze basis of profit-fully understand their meaning

4. Let your share of the bonus.

5. Keep your and let it work following your someone else.

6. Sell with successful operation

7. Handle a which you have

8. Develop a satisfies your classified customer medium.

9. Pay more ment of your es who are c details when are established

Webster says fact or art of skill in directing Therefore, w

to the business in cash or borrowed money.

Earnest effort is generally put behind sales, but in too many cases weakness is displayed in collecting capital (credit) when it is due.

It is not unusual to find entirely too much capital going into credit for just a few customers. Other people who would be customers and who want to use credit on short term basis go to competition where credit policies are enforced.

Loose credit policies on the part of a few for their own benefit (if there are any benefits to be derived from them) continue to demoralize many industries.

The original intent of granting credit in any business is to incur and maintain healthy market potentials. Where unwise credit practices are employed, they break down healthy markets which is not good business for the supplier or the buyer.

There is a definite four-point program for credit management in the farm supply business.

1. Select your credit customer. Don't let him select you.
2. Build an understanding with him. Get a definite understanding about the credit relationship, especially when payment is to be made.

3. Follow-up all accounts. The collection follow-up is to make sure the understanding about payment is carried out.
4. Secure mortgages on operations where credit reports indicate their need for protection.

We recommend that the following points be considered:

1. Sell for cash, first.
2. Sell on short credit terms and only when credit is necessary.
3. Set up fixed charges or rates of interest on all slow accounts.
4. Charge a fixed sum or interest on all long-term accounts.
5. Develop a strong relationship with banks.
6. Develop a strong, aggressive banker program in each trade area.
7. Develop a training program for salesmen and dealers and employees on how to manage credit.
8. Develop a training program between all departments on how to handle company money.

Business Management—a 9-Point Formula for Success

1. Worry about costs even when there is no apparent need for it. Don't think any cost too small to be worth saving.

2. Pare your overhead to that of a low profit operation on the theory that today's profits are abnormally high.

3. Analyze your business on the basis of profit—not sales.

4. Let your employees have a fair share of the profits in salaries and bonus.

5. Keep your cash position strong and let it work for you instead of allowing your business to work for someone else.

6. Sell with facts and records of successful operations.

7. Handle a line of products in which you have faith.

8. Develop a service business that satisfies your customers, and use satisfied customers as your best advertising medium.

9. Pay more attention to management of your business. Hire employees who are capable of handling the details when policies and programs are established.

Webster says, "Management is the act or art of managing, controlling, skill in directing, administration."

Therefore, when we prefix manage-

ment with department, division or district, we can arrive at a very clear picture of what we mean when we refer to each department in a business such as accounting department, credit department, production department, etc.

We can agree, I am sure, that management of any company has great responsibilities. Much greater than others in the company. Management is responsible for the major decisions which make a company a success or a failure.

The success of any business depends to a major degree upon the selection and training of people. The success of a manager depends upon his ability to manage the business of his department, select, train and manage the people within the department.

The executives of a company are pretty important people. They have to supervise and manage the results of many different groups of people, such as salesmen, dealers, customers, prospects, office and plant personnel, etc.

It is generally recognized that there are two types of managers: (1) the one who is highly successful and (2) the other who just "gets by." We would like to give you a comparison of these individuals.

Successful

Manages his business or his or her department.

Runs his department.

A smooth operator.

People in department are confident.

People in department are enthusiastic.

There are no secrets. There are no favors.

The department knows where they are going.

The department operates on a profitable basis.

People manage him or her.

Top management has to make decisions.

There is confusion and turmoil.

People in department are uncertain.

People in department have their eyes open for a new job.

Deals of all kinds are made.

Whispering campaigns are going on constantly.

The department has no goal.

Department generally operates in the red.

Under today's business conditions it is very necessary that management improve its managing ability and see that all department heads improve theirs.

A department manager may develop records, facts, plans and programs. He may hire and train people. On the surface it would appear that he is operating satisfactorily. But if he lacks managing instinct and leadership in the selection and training of people, his management generally ends up something less than a profitable success.

Because we are dealing with all types of people in business today, good leadership is at a premium. Too many managers have been created during the last 15 years who lack that priceless "extra" which turns the efforts of ordinary people into the production of extraordinary results.

The department manager or the owner of a business may be outstanding in many ways but operates his business or his department on an ordinary basis. And if that happens, people within the department or business generally have ordinary attitudes and develop ordinary abilities.

Example: Ordinary management develops ordinary people who prefer to avoid making decisions. Ordinary people are generally lukewarm in enthusiasm. Ordinary people lack faith in themselves and have little confidence in others. Ordinary people are afraid of responsibilities and shun accepting them. Ordinary people are undecided as to where they are going or where they want to go.

There are several basic rules which may be used to stimulate employees and management:

1. Establish clearcut objectives.
2. Provide a step-by-step program to reach objectives.
3. Sell the program of the company to all people within the organization enthusiastically.
4. Plan ahead for others and make long-range plans for management.
5. Teach people how to manage as well as what and when to manage.
6. Teach employees proper respect of their department managers.

In addition to affording employees a chance to earn a good living and provide security, management must know how to direct the functions of a department, know when changes are needed, know how such plans will affect the people and their families and how such changes may affect the company.

Management in many cases can ruin people. The easiest and quickest way to wreck a man is to promote him into the wrong job.

Sometimes an excellent salesman is ruined by promoting him to a sales managing position, only to learn later that you lost an excellent salesman but did not gain a manager. To demote this man would cause serious embarrassment, so he is discharged.

This man, then, is faced with the responsibility of looking for another position. Since he was a sales manager, he is hired by another company as a sales manager, and again, he fails.

If he is lucky, he will eventually be hired by someone as a salesman. But he will not forget his earlier sales managing position and who promoted him. In most cases, he will be embittered for life.

This man's failure should actually be charged to the bad management of the man who promoted him. Sometimes training can be used in an attempt to save the man, but that fails in many cases because the man is in the wrong position.

Generally speaking, "An ounce of selection is worth pounds of training" in these cases.

Training people is a "must" in business. But what industry is sadly lacking in is a training course in the selection of people at the managing and executive level. We are in an age of specialization and have top specialists in many departments except one, "Management."

A list of successful company presidents shows they came from lawyers, engineers, sales, accounting, etc. But they are not successful presidents because they were good in their previous profession. They are successful because they know how to learn "why" about a lot of different things. They learn how to sift the "chaff" from the sound "grain." They learn "why" individuals are different in their ability to handle greater responsibilities.

It is rather unusual to discuss what it costs to replace an employee. We hear lots of discussion on what it costs to hire a person. But the turnover in personnel, in many organizations, is one of the most costly things we have to deal with. As an example, it costs 10 to 100 times as many dollars to dismiss a misfit employee than to hire a satisfactory one, even if in hiring all the steps are followed which modern personnel practices recommend.

There are many costs involved in the hiring of every new employee—interview time, training time, compensation, etc., in addition to which we must add the cost of general supervision or departmental management, and overhead.

The company that does not have a continuous training program in one

form or another pays for it either in the loss of time, inefficiency, loss of business or loss of customers, etc. If a company fails in its training formally, the employee generally tries to train himself informally and will most likely get out into many by-roads, which prove costly to the company in the end, even though such costs are indirect.

When employees are hired by rule-of-thumb, unscientific methods and exaggerated promises, there is always a tendency to hang on to a poor employee even after he has fully demonstrated his inability to do a job. With no yardstick for hiring, there is no measuring stick for firing. The results are that the cost of bad hiring climbs higher and higher, and good money is thrown after bad in each case.

Probably one of the greatest problems in America today is the failure on the part of the individual in business to train himself by taking time from his own pleasures to advance himself for greater responsibilities.

We can all agree that every business and every industry must be on its toes searching for new and unknown developments and products. Scientific research is being utilized in every progressive industry today to bring about such developments.

As we multiply our population at the rate of over 2 million people per year, every business must lend its support and contribute to increased demands. This brings about another serious problem in America, the problem of locating young men and women capable of assuming and growing into advanced positions with greater responsibility to provide replacements for today's leaders.

The natural place for a company to look for people who have the ability to accept greater responsibility is within the ranks. The demand for executives is greater each day and the requirement for their time is higher.

Executives are required to spend more of their time on today's needs, which retards their thinking and planning for tomorrow. Consequently, in the average business, executives do not have sufficient time to devote to the training of young men and women for higher positions.

I think we can summarize the situation as follows:

1. We have more concerns doing business today than ever before.
2. The job of managing business, departments and all classes is more difficult and complex.
3. The need for executive talent with greater managing ability is much greater than ever before.
4. There is a greater need for training executives and all personnel than ever before.
5. The delegation of responsibility with authority is needed more in business today than ever before.

With these responsibilities upon the shoulders of top management, it is highly important that all personnel recognize their position and standing within the company and opportunities which may be theirs if they will devote a little extra time and energy to improving themselves so that management will recognize their increased efficiency, talents and abilities.

We should increase our personal results by physical effort.

We should increase our personal results by mental effort.

We should increase our personal results by personality and more effort.

*if your product is marketed
through distributors and dealers ...*

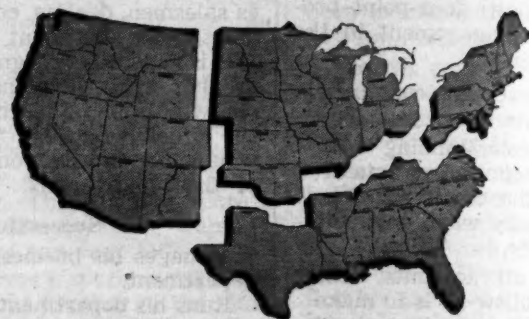
Croplife is for YOU!

AN IMPORTANT EXCLUSIVE is available to advertisers whose agricultural chemical products are marketed through distributors and dealers. It is Croplife's unique *regional crop-area circulation plan*, carefully developed to fill an urgent need in the industry's marketing and advertising facilities—the need of advertisers to reach the dealers and distributors and farm advisers with an up-to-date story of their products and their consumer promotion plans.

THIS IS THE PLAN: In addition to the weekly circulation to manufacturers and formulators, Croplife is distributed on a regional crop-area basis to the dealer-distributor-farm adviser segment of the industry. The merchandising section in each issue of Croplife is specifically edited for dealers in one specific region. This carefully planned editorial formula insures intense reader interest.

More than 11,000 DEALERS, 1,700 custom operators and 1,000 farm advisers receive the issue of Croplife specifically edited for their regional crop-area once each four weeks. The mailing schedule for this group covers consecutively four geographic regions of the United States (see map) with one of four regional dealer issues: The Northeast Dealer Issue, the South Dealer Issue, the Midwest Dealer Issue or the West Dealer Issue. Each week Croplife goes to more than 3,500 dealers, distributors and farm advisers in one of these four regional crop-areas.

THIS CIRCULATION EXCLUSIVE is available only through Croplife. The regional crop-area circulation to dealers has been carefully developed to fit the particular needs of the agricultural chemical industry. Many individual products have been developed and approved and are being sold for use on a specific crop; therefore, marketing and promotion plans must be directed specifically to the appropriate crop-area. Croplife's dealer circula-



In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas

tion developed along crop-area lines offers advertisers the *most flexible medium possible*, designed to give "direct-hit" coverage for specific messages without the higher cost of a larger-than-necessary circulation on an inflexible nationwide basis. Advertisers interested in reaching dealers in more than one region can do so easily and economically with a selective advertising schedule.

HOW TO USE THE PLAN: Select the regional crop-areas—Northeast, South, Midwest or West—in which you need to reach dealers, distributors and farm advisers with the up-to-date story of your products and your consumer promotion plans. Plan your message to inform and to educate this group. Then, select the appropriate issues of Croplife to carry your advertisements. Croplife's printed circulation statement outlines the four regional crop-areas in detail and gives the issue-by-issue mailing schedule. Ask us for a copy.

AND SOON—4000 additional selected dealers will be added!

BEGINNING IN JANUARY this important circulation exclusive becomes even more valuable to advertisers who are reaching dealers through the pages of Croplife. An additional 4,000 selected dealers handling agricultural chemicals will be receiving the issues of Croplife edited specifically for their crop-areas. One thousand dealers in each regional area have been screened and verified and will be added to Croplife's controlled circulation

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FERTILIZER CONTROL OFFICIALS

(Continued from page 1)

Mr. Ludwick said that the action must come from the state fertilizer control officials. He pointed out that the proposal has had the support of fertilizer manufacturers as well as mixers and that all groups concerned would benefit from its adoption.

In connection with the need for uniformity among state control officials in sampling procedures, Mr. Ludwick said that "not enough samples are being taken" by the inspectors, and that there is also room for improvement in sampling procedures to eliminate much of the congestion of sampling in the spring during peak movement of fertilizers. Attention should be given also, he said, to the method of sampling bulk purchases of fertilizer and to custom applications.

"Whether we like it or not, the fertilizer-pesticide mixtures are here to stay," Mr. Ludwick said. "You can be sure that when a farmer spends an extra \$11 and gets an increase of a half of bale of cotton or 50 bu. more of corn per acre, he is going to continue to buy a fertilizer-pesticide mixture."

Fertilizer grades as now known are slowly disappearing, Mr. Ludwick told his listeners. He said that there is a trend among agricultural experiment station and agricultural extension personnel to recommend fertilizer requirements in terms of the elements potassium and phosphorus, rather than their oxides. "The guarantees could all be on an elemental basis within a comparatively short time," he said, adding that "tradition should be eliminated when it interferes with progress."

Mr. Ludwick urged the fertilizer control officials to become more active in promoting the role of plant foods in agricultural production. He said that the fertilizer industry, the experiment station and extension personnel and other groups "just don't have enough manpower to do the job alone," and that the story needs to be told more effectively.

"It has been my observation in contacts with dealers and farmers that much valuable and needed research information is not reaching the level of practical application," he said, adding that in their positions, the fertilizer control officials have opportunity to render valuable service to the farmer and the industry.

A committee, composed of Mr. Cloaninger, K. D. Jacob, U. S. Department of Agriculture, and J. F. Fudge, College Station, Texas, reported on results of a questionnaire with which state control officials were queried on the advisability of changing fertilizer guarantees to the elemental basis.

The questionnaire was sent to control officials in all states in July, and returns are still coming in. Of 49 sent out, 40 states and Canada had submitted reports in time for the committee summary at the convention. The returns showed that most states could not make this change without action by the legislatures.

Each state was asked to poll persons in its control group on the proposal to change P and K guarantees from the oxide to the elemental basis. Of the 41 returns, 18 did not include such a poll. Four others stated that all were in favor and one that all had no preference.

In the remaining 18 states, 41 persons favored the change, 27 were opposed and 10 had no preference.

Paul T. Truitt, executive vice president of the National Plant Food Institute, outlined the objectives and operation of his organization for the fertilizer control officials. Mr. Truitt told of the merger of the American Plant Food Council and the National Fertilizer Assn. and detailed the many activities of NPFI.

He told the audience that its aims included promotion of the interests of the fertilizer industry, aid and encouragement of research in the use of plant foods, aid to control officials in the administration of their laws and regulations, and maintenance of a vigorous public relations program.

Mr. Truitt cited the need of an improved uniform system of reporting fertilizer tonnage figures and said that the control officials should also recognize the growth of the use of fertilizer solutions and fertilizer-pesticide mixture use. He pointed out that the use of fertilizer-pesticide mixtures during 1955 was about 70% over the 1954 total and the 1956 tonnage is expected to show a 200% increase.

Dr. J. B. Pitner, manager of agricultural services for the Grace Chemical Co., Memphis, Tenn., told the control officials of the necessity for giving "more and more support to fundamental research in soil fertility and fertilizer use." Dr. Pitner's address, entitled, "Plant Food Research as Related to Fertilizer Practices," was a review of changing practices in fertilization.

He said that the present needs for research include fall application versus spring application of fertilizer, the effects of supplemental irrigation on fertilizer efficiency and fertilization of winter cover crops as a method of application.

The control officials were brought up to date on new developments in the manufacture of fertilizers by Dr. E. C. Kapusta, technical service director of the U.S. Potash Co. Dr. Kapusta said that this country's total supply of nitrogen "has skyrocketed during the past few years," and that this country can now supply its own nitrogen needs.

The phosphate supply expansion has been "quite nominal, compared to the expansion in nitrogen," he said. The 1954-55 supply amounted to 2,312,000 tons, he said, adding that this figure was an increase of about 20% over the prior year. That figure applies to normal superphosphate. With regard to the production of triple superphosphate, the supply has been upped by about 70% in the past five years, due largely to the trend toward high analysis fertilizers.

The supply of potash in the past five years has seen an increase of about 40%, Dr. Kapusta said, going from 1,300,000 tons in 1950-51 to 1,860,000 tons in 1954-55. There has been an increase in the supply of higher analysis materials for potash, also, Dr. Kapusta added.

The ammoniation and granulation of mixed fertilizers are commanding much attention from the industry at the present time, Dr. Kapusta told the control officials. He said that as of the present, about 100 fertilizer plants have added or are adding granulation and ammoniation equipment. He estimated that in 1956, about 15% of the total fertilizer tonnage produced would be in the granular form. Most of the activity in granulation of fertilizers is in the Midwest, he said.

Dr. Kapusta also told the control officials of the rapid increase in the use of fertilizer-pesticide mixtures. He said that the volume in 1952-53 amounted to 90,000 tons, increasing to 150,000 tons in 1953-54 and 200,000 tons in 1954-55. He said that the principal insecticides used in the mixtures were aldrin, chlordane and DDT, in that order, with about one half of the total tonnage being devoted to corn production. He predicted the continued growth of the fertilizer-pesticide tonnage.

Fertilizer solutions, he said, are showing an increase in use principally in the West and Southwest.

The adoption of the practice of recommending required plant nutri-

ents in terms of pounds of each nutrient per acre, rather than pounds of any specific grade of fertilizer, was recommended by J. Fielding Reed, Southern Manager of the American Potash Institute, in an address, "Ratios and Multiple Grades as Related to Soil Testing."

Mr. Reed explained that, with higher analysis fertilizers coming into use, the soil testing agronomist is posed with the problem of several grades being available which supply the plant nutrients in the same ratio. He admitted that the farmers are accustomed to thinking of plant nutrients in terms of fertilizer grades and not in terms of pounds of each of the nutrients required. He said, however, that this difficulty can be solved by supplying the farmer with an easily useable conversion table which shows him pounds of the different grades of fertilizer which would satisfy the plant nutrient requirements recommended by the soil tester.

Mr. Reed said that soil testing programs are comparatively new in most states and have done an excellent job in facing the transitions in fertilizer practices.

He said that most soil testing agronomists believe that the recommendation of a specific grade is not a soil tester's objective. From the results of the test, and along with other information at hand, the soil tester can suggest the pounds of nitrogen, phosphorus and potassium and possibly other nutrients necessary for best crop production on that soil. But, in addition, to make the recommendations better understood, it is generally customary to suggest also a grade and rate that will supply these nutrients.

"When several grades meet these conditions, a conversion table is necessary to avoid discrimination among grades," Mr. Reed said. He concluded by saying that the long range program of the soil testing agronomist is based on educating the farmer to think in terms of plant nutrients required, and to convert these requirements into terms of grades himself. This approach is necessary, Mr. Reed said, because of the multiplicity of grades of the same ratio that is being offered today.

A discussion of the business side of operation of a complete liquid fertilizer plant was presented by R. B. Ellsworth, general manager of R. B. Ellsworth & Associates, Indianapolis. He said that the first plant of this type was established in Indiana in 1953.

The requirements for successful operation of a complete liquid fertilizer plant, Mr. Ellsworth said, include the following: a minimum of \$100,000 in capital, low-cost formulations, a well-engineered plant with adequate storage capacity and an efficient sales and distribution organization.

Mr. Ellsworth said that of the \$100,000 capital, about one third of it would go for the cost of the plant and the remainder for operating capital. Sales are made through what he classed as "wholesalers," or dealer-truckers and custom applicators with their own equipment; and retail sales for delivery to farmers' storage tanks.

A plant of economical capacity can serve an area of from 30 to 50 miles in radius from the plant. Mr. Ellsworth said that a production of 2,000 tons annually was the break-even point and that 5,000 tons annually was the optimum production.

He said that farmers "have been slow to accept complete liquid fertilizers," and that the principal advantages to be gained by the farmer when using this type of product include a saving of time and labor, and that this type makes possible a high-nitrogen formulation. In addition, insecticides, herbicides and trace elements may be applied with the fertilizer.

Mr. Ellsworth said that the liquid fertilizer industry is "feeling its way



M. P. Etheredge
Heads Control Officials

along" and "has a lot more to learn about its own operations."

W. C. Winton, chief inspector of the seed, feed and fertilizer division of the Oklahoma Department of Agriculture, presented an outline of the various publications and reports used by his department in acquainting the public with the department's program. A feature of Mr. Winton's reporting system is the use of IBM tabulating equipment to obtain tonnage and inspection data within a short time. The different operations in assembling the data were described with the aid of projection slide pictures.

A report on the distribution of bulk fertilizer in the 1953-54 season was presented by Walter Scholl of the fertilizer and lime section, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md.

His report showed that a total of 1,829,728 tons of solid fertilizers were shipped in bulk for distribution for retail consumer trade (shipments for manufacture not included) in the U.S. during the fiscal year ended June 30, 1954.

This comprised 8.25% of the total solid fertilizer shipped in the U.S. during the period.

Within the over-all total of bulk-shipped fertilizers were 469,423 tons of mixtures, 1,011,264 tons of primary nutrient materials and 349,041 tons of secondary and trace element materials.

Slightly more than 3% of all mixtures moved during the period were shipped in bulk, while 16% of all primary nutrient materials and 57% of secondary and trace element materials were shipped in bulk.

JOHNS-MANVILLE

(Continued from page 1)

"Micro-Cel." The product is a powder produced by chemical combination of lime and diatomaceous silica. Specific grades with a wide range of physical properties will be available.

The firm has been producing the material for some time at its "semi-plant" at Lompoc to provide limited quantities for customer acceptance studies and test quantities for experimental and development purposes. Approximate carload price is between 7¢ and 10¢ lb.

Johns-Manville said it believes its new product will have application as a bulking, suspension, anti-caking and flattening agent; reinforcing pigment; pigment extender; and in viscosity control and uniform dry dispersion.

OPEN FEED STORE

LAURENS, IOWA—W. C. Fuchs and Ivan Harlow have opened the F&F Feed & Farm Supply Store here.



WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

A plentiful supply of phosphates is vital to New Zealand's economy as a supplier of dairy, meat, wool and other agricultural products to the world's markets. Because of this several firms are planning new production units, and within the next few years the country is likely to have as many as 15 plants producing water-soluble phosphate in the form of superphosphate.

The Kiwi Fertilizer Co. started work Aug. 11 on the erection of a new factory at Morrinsville in the Waikato district of North Island. The cost is estimated at the equivalent of \$2.8 million.

Two other fertilizer companies are interested in the development. Two thirds of the capital has been subscribed by the Challenge Phosphate Co., Ltd., which has a superphosphate works at Otahuhu, Auckland, and a third by the New Zealand Farmers' Fertilizer Co., Ltd., which has a superphosphate works at Te Papapa, Auckland.

The main product of the new plant will be standard grade superphosphate of approximately 20 to 21% phosphoric acid.

Another firm, the Bay of Plenty Fertilizer Works, Ltd., is promoting the construction of a superphosphate works at Mount Maungani, a port located near Tauranga, North Island. The Dairy, Meat and Wool Boards of New Zealand will provide a loan of \$2,240,000 as a result of the company implementing a promise to raise \$700,000 itself.

Initially, the output will be 100,000 long tons a year with a planned potential of 200,000 tons yearly. The first figure will provide enough fertilizer for 1 million acres and 1 million sheep. The sale of fertilizer will be confined to shareholders.

Farmers' Cooperatives

The system of farmer-owned cooperatives is increasing in New Zealand as a means of securing fertilizers. The East Coast Farmers' Fertilizer Co., Ltd., which recently built a new plant, operates only among its farmer-members. Two other firms, Kempthorne Prosser's New Zealand Drug Co., Ltd., and Dominion Fertilizer Co., Ltd., are providing jointly 50% of the cost of a new plant at Winton, with the remaining 50% coming from the farmers of the southern provinces, who will benefit from the increased production.

The southern farmers already support a cooperative-owned plant and they are going ahead with a plan to establish an acid process plant at the port of Bluff in Southland. The earlier intention was to construct a synthetic calcium-magnesium phosphate works. However, this plan was changed when a delegation went to Japan to study the manufacture of this material and reported against its economic manufacture.

Canadian Addition

Interprovincial Cooperatives, Ltd., St. Boniface, Man., Canada, proposes to spend \$30,000 on doubling its warehouse space. The company's stake in the insecticide, herbicide and grain fumigant business is expanding, officials state, and the extra space is badly needed. The company ships its products into the Maritime provinces and into eastern Ontario.

Insect Danger

Canada is holding the largest wheat stocks ever known in the history of the country. One of the biggest dangers facing these stocks, other than not being able to find markets for them, is insect infestation.

In particular danger is the wheat still stored on farms because of the lack of elevator space. The stored

products insect laboratory of the Canadian government's Department of Agriculture reports that attacks by insects are in evidence in old grain stocks in both country and terminal elevators. Some grain moving off the farms into elevators is showing evidence of extensive insect damage, the laboratory reports.

The authorities are urging close investigation of bins that have been carrying stored grain for a period of a year or more. Most of the damage, they say, is being caused by the rusty grain beetle and the grain mite.

Japanese Expansion

The increase achieved in the production of nitrogenous fertilizers in Japan since the end of World War II has been described as remarkable.

Superphosphate production in 1954 was returned at 1,554,000 metric tons, 37% higher than in 1952 and 22% more than in 1953. Ammonia at 693,600 metric tons increased 22% over 1952, nitric acid at 88,800 tons bettered 1952 by no less than 80%.

Other increases last year over 1952 were ammonium sulfate 2,096,400 tons, up 12%; urea 124,800 tons, higher by 122%, while ammonium nitrate at 37,200 tons bettered 1952 by 41%.

African Deposit

A deposit of more than 3 million tons of calcium phosphate has been discovered in the Lake Chilwa region of Nyasaland, Africa. The expectation is that when the ore has been treated with sulphuric acid it will yield abundant resources in superphosphate for which markets can be found in the surrounding agricultural areas.

French Import Duties

The French government has established a duty of 10% ad valorem on nitrogenous fertilizers imported in bulk or in packages weighing over 25 kilograms (55 lb.). Imports hitherto have been made free of duty.

The French authorities, however, made one qualification to the order. A quota was fixed on nitrogenous fertilizers in the amount of 20,000 metric tons and up to this limit supplies may enter the country duty free. This concession, unless extended, will end June 30, 1956.

U.K. Appointments

J. Watson Napier, Fisons, Ltd., has been appointed president of the British Fertilizer Manufacturers' Assn. for 1955-56. Appointed vice president is P. K. Proctor, H. & T. Proctor, Ltd.

The Superphosphate Manufacturers' Assn., announces that J. T. Proctor, Henry Richardson & Co. (York), Ltd., has been appointed chairman for 1955-56 with T. Williams, Eaglescliffe Chemical Co., as vice chairman.

SOLUTIONS MEETING

(Continued from page 3)

the cultivation of legumes. He presented a chart showing the cost of nitrogen at about \$1.25 lb. when produced through legumes, as compared to 15¢ lb. when purchased commercially. "It's just plain economics," he declared.

Without the addition of nitrogen, a field may produce 40 bu. corn an acre, at the cost of \$1 bu., he said. But with the addition of \$30 in fertilizer, the yield may jump to 100 bu. an acre, thus bringing the cost down to 70¢ bu. and allowing the farmer to realize a greater profit. The economics in this type of operation are very favorable, he observed. "There should be no penalty for efficiency in American farming," Mr. Lathrope added.

The program called for a talk on "Selling Nitrogen Solutions" by John Waugh, director of advertising, Nitrogen Division, Allied Chemical & Dye Corp., but illness prevented his attending the program. In place of Mr. Waugh's talk, a movie depicting American life in 1975 was presented.

The meeting terminated with a noonday luncheon at the Abraham Lincoln Hotel. Richard Cecil, Dayton, Ohio, presided and introduced Walter S. Colvin, Nitrogen Division, Allied Chemical & Dye Corp., who spoke briefly on the necessity of salesmanship in the nitrogen solution field.

George H. Iftner, assistant director of agriculture of the state of Illinois, was the featured speaker. He warned his listeners that the farm situation is certain to become a political football in the coming campaigns, and it is likely that the fertilizer industry will be criticized as contributing to the present situation. On the contrary, he declared, "anything that makes for more efficiency on the farm is not to be condemned."

He told the group that it is "engaged in one of the finest industries that could be, since improving the land is basic to life itself." At least two thirds of the farm land of the U.S. is depleted so far as plant nutrients are concerned, he said.

The association plans to hold a similar meeting in the fall of 1956, although the time and place have not been decided. According to an association spokesman, however, the locale is likely to be in the Middle West.

Annual Oregon Weed Conference Planned

SALEM, ORE. — Latest findings in chemical warfare against weeds will be reviewed in public sessions Nov. 9 and 10 at the fourth annual Oregon Weed Conference at the Senator Hotel, Salem.

Reports by Oregon State College researchers and agricultural industry representatives will deal mainly with crop-robbing weeds, although some attention will be given to beautifying home grounds through weed control, says conference secretary Rex Warren, Oregon State College farm crops specialist.

Research findings will include weed control in cereal, vegetable, strawberry, and grass and legume crops; chemical and mechanical removal of sagebrush; and control of plant growth in farm ponds. Among other topics are the operation of weed districts as seen by a panel of weed supervisors, a county judge and a county extension agent.

LACK OF LIME

COLUMBIA, MO. — Numerous cases of a lack of limestone on Missouri soils have been noticed recently, say University of Missouri extension soils specialists. Where soil and plant tissue tests were used, the tests have shown that there was not enough usable lime for growing crops.

Northwest Group To Hear Reports On Farm Projects

PORTLAND — Reports on farm demonstration projects sponsored in Washington and Idaho and a proposed demonstration project in Oregon will be part of the program of the annual convention of the Pacific Northwest Plant Food Assn. at Bend, Ore., November 2-3. The farm projects, in which farms are selected, fertilizer furnished free and technical advice given by the Soil Improvement Committee of the association, are one of the main projects of the Association.

Dr. Russell Coleman, executive vice president of the National Plant Food Institute of Washington, D.C., will be one of the main speakers at the convention. Other speakers will include Dr. William Pearl, administrator of the Bonneville Power Administration, who will be a noon luncheon speaker Nov. 2, talking on "Electric Power and Agriculture," and J. D. Patterson, chief chemist, State Department of Agriculture, for Oregon.

Burton Hutton, assistant 4-H club leader for Oregon, will talk on educating the younger generation on the value and usage on farm crops.

Election of officers and the annual banquet will be held Nov. 2. Arrangements are being made for entertainment of the ladies, including a Ladies Brunch the morning of Nov. 3.

Gloomicides

A man was striding happily along the street one morning when a neighbor fell in step with him. "You're pretty happy this morning," said the neighbor. "That's right," smiled the first man. "I've finally cured my wife of her habit of yelling at me all the time." "And how did you do that?" inquired the neighbor. "Well," said the other, "I have convinced her that yelling at me was making a nervous wreck out of the dog."

★

Life can be beautiful—if you have enough other things to think about.

★

"Now madam," said the saleslady in the hat shoppe, "here's a number that will never go out of style. Ten years hence it will look just as ridiculous as it does now."

★

About the time a fellow gets to the point where he thinks nothing is too good for a girl, he offers himself.

★

An officer in the American Army of Occupation speaking to an audience of Japanese students in Tokyo found an interpreter writing his speech on a blackboard as he spoke. The novelty of the idea amused him and he watched the characters spread over the board as he delivered his message. As time passed the writer gradually became slower and finally stopped entirely, though the American was still speaking for several minutes more. Leaving the platform, he asked the presiding student what the interpreter had written.

"He wrote your speech in Japanese characters," was the reply.

"That's what I thought; but why did he stop before the speech was finished?"

"Oh," replied the Japanese smiling, "he was only writing down the ideas."

★

Husband: "I wonder what's wrong with my shaving brush."

Wife: "It was nice and soft when I painted the bird cage yesterday."

Mid-South Cotton Fields Good; Army Worm Damage Noted

MEMPHIS — Army worms are damaging fall oats and winter legumes in some parts of the Mid-South according to crop reports from officials of the extension services in Arkansas, Mississippi, Missouri and Tennessee.

While weather conditions slowed the harvest of cotton, rice and soybeans, planting and harvesting vied for top interest among farmers. Some progress was made in both.

The Arkansas crop picture didn't change much from the previous week, although cooler weather was threatening late gardens and other crops.

Rain in some spots was continuing to slow down cotton picking. The rice harvest is past the half-way mark, although slowed by the rains. The extension service said Craighead County reported heavy winds and caused much damage to the rice crop, while Arkansas County reported some rice was down but that there would be little loss of grain.

The hay harvest is completed in many counties and most farmers have an abundant supply.

Cotton and soybeans, the two top crops in Pemiscot County, Mo., were being harvested with a third of the cotton harvest having been completed. W. F. James, Pemiscot County agent, said.

"Most folks are getting more cotton than they thought they would," Mr. James said. "Rain in spots throughout the county caused trouble to the harvesting, but both machines and hand pickers are in most cotton fields."

Mr. James said some farmers are getting as much as \$5 bu. to the acre in the area bean crop.

A long-range cotton production goal of a bale or more per acre statewide has been achieved this year, the Mississippi Agricultural Extension Service reported.

Latest crop estimates place Mississippi's average 1955 production at 29 pounds of lint cotton per acre.

"Mississippi's cotton growers now are going to strive to raise the state average yield to two bales per acre," said T. M. Waller, extension cotton specialist.

Cotton picking continued last week with South Mississippi reporting the crop around 80% gathered. In the Delta, Mr. Waller estimates cotton harvest is 55 to 60% completed; and in the northeast hills, around 35%.

A. G. Bennett, extension entomologist, says army worms are causing heavy damage to oat and legume fields. This is especially true in Yalobusha, Leflore, Bolivar, Washington and Lincoln counties. But, he emphasized the danger from these worms is state-wide.

If not controlled, the worms can completely destroy a stand of winter grazing, Mr. Bennett pointed out.

In West Tennessee, Ben Hazlewood, director of the West Tennessee Experiment Station at Jackson, reported that rains continued to hamper the picking of cotton, with some 35 to 40% of the crop harvested.

W. B. Turner, Madison County agent, said the rains have damaged the grade of cotton. The rains have helped farmers to plant cover crops and extension officials point out that there still is time to seed small grains for pasture.

RODENT CONTROL FOLDER

FARGO — Information on the control of ground squirrels, prairie dogs, pocket gophers and field mice is now available in a new folder prepared by North Dakota Agricultural College Extension Service. Number of the 6-page circular is A-243.

Defoliation Tests Reported in New Arizona Circular

PHOENIX — Defoliation experiments on cotton, including reports on the effectiveness of amino triazole in cotton defoliation, are reported in an extension service circular No. 203 entitled "Defoliating Cotton in Arizona."

Experiments with amino triazole begun in 1952 have indicated (1) adding it to other defoliants raises efficiency as much as 90%, (2) amino triazole is especially effective in delaying secondary growth, and (3) when used with other chemicals as a bottom defoliant it aids in retarding weeds and grasses.

Circular authors Lamar C. Brown, U.S. Department of Agriculture plant physiologist, and Charles C. Brown, University of Arizona extension agronomist, warn that use of amino triazole alone may bring inconclusive results; when mixed with commercial defoliants best results are achieved.

Less than 20% of Arizona's cotton crop in 1950 was defoliated by chemical means, and this year about 50% of the crop was treated.

ARMY WORM INVASION

OKLAHOMA CITY, OKLA.—Some concern is being felt over the invasion of army worms and a species of grass worms that have appeared in the southern portion of the state. Their attack is being made principally on rye, oats and clover.



Frank McGrane

JOINS AMERICAN POTASH — American Potash & Chemical Corp. has announced that Frank McGrane has joined the company's general sales department. He will operate out of the main office at Los Angeles on special assignments. Mr. McGrane formerly was southern California district sales manager for the agricultural chemicals department of American Cyanamid Co. Born at New Rochelle, N.Y., he studied at the University of Arizona. He and his family live at Arcadia, Cal.

Howard P. Mansfield, Former Director of Grasselli Sales, Dies

WILMINGTON, DEL.—Howard P. Mansfield, former director of sales of the DuPont Co.'s Grasselli Chemicals Department, died Oct. 13 at his home here at the age of 71.

Mr. Mansfield joined the Grasselli Chemical Co. in Cleveland in 1905. He held many positions in management, including that of vice president, until 1929 when the company was acquired by the DuPont Co. He then became director of sales, with headquarters in Cleveland.

In 1937 the Grasselli Chemical Co. became a department of the DuPont Co., and headquarters were moved to Wilmington, where Mr. Mansfield continued in a similar capacity until his retirement in May, 1949.

SPIDERS A PROBLEM

BLACKSBURG, VA. — Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute, says reports of large numbers of black widow spiders have come from southeastern and southwestern Virginia counties, and they likely are a statewide problem.

**FERTILIZER
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Vincent Sauchelli

A complete up-to-date revision of this well known book, that reviews in simple, everyday language the processes of manufacture of superphosphates, of ammoniation, and the formulation and preparation of mixed fertilizers. Indispensable to fertilizer plant supervisors and operators, and a valuable aid to research men and teachers. New chapters added: on plant nutrition, mixed fertilizers, ammoniation, granulation, revised and brought up-to-date. 80 tables of practical information. \$4.50

HUNGER SIGNS IN CROPS—Second Edition

A symposium — published jointly by the American Society of Agronomy and the National Fertilizer Association.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents, and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color. \$4.50

USING COMMERCIAL FERTILIZER (1952)

Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trace-element plant foods. 208 pages, 106 illustrations, cloth bound. \$3.00

THE CARE AND FEEDING OF GARDEN PLANTS

Published jointly by the American Society for Horticultural Science and the National Fertilizer Association.

An entirely new, one-of-a-kind book, it is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color. \$3.00

COMMERCIAL FERTILIZERS, Their Sources and Use—Fifth Edition (1955)

Gilbeart H. Collings

Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages. \$8.00

PLANT GROWTH SUBSTANCES (1953)

L. J. Audus, Professor of Botany, Bedford College, University of London

This book deals with efforts to increase the yield of agricultural and garden crops, and the application of chemicals as it applies to plant physiology. It is not too technical and is valuable to chemical specialty manufacturers, agricultural chemists, plant physiologists, ecologists and gardeners with scientific interest. Dealing with scientific fundamentals and practical application of growth substances, as well as in bibliography, make it an important source book in the field. 456 pages, 43 illustrations. \$6.50

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages. \$5.50

MANURES AND FERTILIZERS

A survey by the Ministry of Agriculture and Fisheries, dealing with soil analysis, inorganic fertilizers, waste organic substances and principles of manuring. In language to give the farmer basic principles of increasing soil fertility by the application of natural organic manures and synthetic inorganic fertilizers. Many important tables on quantitative data. \$2.50

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SAFETY SECTION MEETING

(Continued from page 1)

actually, they are "two sides of the same coin." It is therefore impossible to throw one away without discarding the other, too.

"The principles of sound human relations are based on the recognition of the worth and dignity of the individual. Unless we believe basically in the worth and dignity of the individual, we cannot even begin the safety education program." To be effective, such a program must convince the employee that safe practices are to his and the company's best interests, Mr. Foresman added.

Increasing the importance of the individual worker is one of the most essential factors in a sound human relations program, he said. "To the extent that the employee believes that the company is concerned about his welfare, to that extent are we well on our way to good human relations.

"At least 80% of industrial accidents stem from the commission of unsafe acts, not from the lack of protective or safety devices," he said. "This means that regardless of how many guards or slip-proof devices we may have on a stairway, we cannot protect a man from falling if he refuses to be protected and insists upon being careless."

Mr. Foresman then concluded that safety is an attitude which must be motivated with each individual. These attitudes, comprising the beliefs and convictions of the individual, are subtle factors in the personality of each person.

"We have a tendency to respond to 'what' others do without going deep enough into the situation to find out 'why' they do it," he said. "The only way we can learn about attitudes is to answer this question of 'why' they do certain things."

Talk Won't Solve Poor Safety Record

Safety programs are thus an important part of human relations. The problems of a plant with a poor safety record cannot be solved by merely talking about safety. It requires a more basic study of why is the record bad and why do the employees act as they do.

Along this line, the speaker said that frequent causes for accidents are a distaste for the job, a lack of the will to work, dislike of a supervisor or dislike of fellow employees. "These factors are all human relations reasons why a man is unsafe or accident-prone," he observed.

To get at the root of the problem, Mr. Foresman declared, it is necessary to establish a two-way system of communication. This is the most important ingredient to produce understanding. "We must first of all be able to listen so that we can understand what established convictions and attitudes already exist, then communicate so that we can possibly influence and change these attitudes."

Devices for establishing communications are numerous, the speaker said. For instance, there is face-to-face communication. This is basic to not only industrial human relations, but also to safety and group morale. Of first importance in fertilizer plants, is effective communication between the supervisor and his men. "Without effective communication on this level all other media are ineffective," he declared. "If the employee does not have the attitude established of believing what he hears and sees in person, then he can never be reached with the printed word."

The speaker emphasized that much of our communication is done outside of words, particularly

through our actions and activities. "Lending lip service to safety on the part of the supervisor who does not himself practice safety, will sabotage communication. We believe what a man does rather than what he says. We practice by example, not by verbal direction. This is true up and down the management line," he pointed out.

"If we say that each individual is important in the eyes of the company and then degrade that individual's dignity with our actions, we have communicated only one fact . . . that we don't mean what we say." He added that every worker wants to have a sense of belonging in his group, and to accomplish this, management must keep him informed of what is going on.

Employee Communication Techniques Described

He told about various techniques employed by different firms to accomplish this end . . . some using company publications to put across the points and others making use of media such as bulletins.

One method recommended by Mr. Foresman is that of communication with members of the employee's family so that they, too, become conscious of safety and informed of the company's interest in cutting down accidents.

Through this end, he said, it is easier to correct attitudes of job dislike, unwillingness to work, supervisor dislike and fellow-employee dislike and replacing these with positive factors. To accomplish this, is to eliminate these frequent causes of accidents in the plant.

The challenge, therefore, is to become familiar enough with attitudes and convictions so that we can understand why our people are either safe or unsafe, he summarized. Only in an atmosphere of understanding, trust and sincerity is it possible to communicate safety effectively.

P. W. Logan, loss prevention department of Liberty Mutual Insurance Co., Atlanta, Ga., demonstrated to the group on Oct. 17, some of the methods that might be used to illustrate safety to men in fertilizer plants.

"Nothing is more essential to your success than the exhibition to your men at all times, of the very best personality that you can develop," he said. It is the supervisor's responsibility to get the job done, he pointed out, but there are different ways to do it. It is possible to bully the men, or "you can win by having their loyal support," he said.

Although the latter is by far the more effective, he said, still it may be difficult for many supervisors to accomplish this. "Why do they not

respond to friendly treatment . . . why do you have to push them to get action?" he asked.

Mr. Logan suggested that the trouble may not lie in lack of knowledge of the job on the part of the supervisor, nor in his failure to plan the job, but it may be a problem of personality. He urged all supervisors to look at themselves objectively and critically, since personality is part of getting the job done.

To be successful, a supervisor must win the respect of his men. He must be self-critical, be willing to accept criticisms and ideas of others and able to change his outlook voluntarily. The supervisor must "sell" himself to his men and if bad personality traits are found in the supervisor, he should be humble enough to seek to correct the thing that stands in the way.

Mr. Logan showed on the screen, pictures of types of foremen, good and bad, describing their respective qualities. These included the "hot-head" who often flies into a rage; the "two-faced" variety who smiles and then stabs one in the back; the "flitter," always running from one emergency to another; the "old-timer" who resists change; the "sour-puss" whose gloomy attitude reflects throughout the department; the "big shot" who wishes to impress everyone; the "tough guy" who bullies his men; the "snooper" who intrudes into his men's personal affairs; the "jelly-fish" with no backbone; the "belly-acher" who finds fault with everything, and the "theorist," who is referred to by his men as a "pencil pusher."

In fairness to supervisors in general, Mr. Logan said, very few are as bad as some of those pictured, but if any of these traits are holding one back, they should be corrected, he said.

Mr. Logan also emphasized the differences between what he termed a "boss" type of supervisor and the "leader." One drives his men, the other coaches; the boss depends upon authority, the leader upon good-will and cooperation. One makes the job a drudgery; the other makes work interesting.

Technical Knowledge Can't Replace Common Sense

The gift of common sense was given a high rating by the speaker who declared that technical knowledge, though an asset, cannot substitute for simply knowing how to accomplish things.

He urged the safety people to present an association of ideas to the men in the plant so they will remember safety. One idea was to ask if any employee would be willing to select one aspirin out of a bottle of 100 tablets knowing that among them was a single tablet containing potassium cyanide. The chances against his being poisoned

were clearly 100 to 1, but none would take a chance. This illustration thus points up the folly of taking chances with life and limb in the plant.

In a preliminary report on the employee motivation study project report sponsored by the Fertilizer Section, Dr. Charles W. Nelson, associate professor of industrial relations, University of Chicago, told the convention about his interviews with typical fertilizer plant employees.

The study, he explained, was to gain information on learning habits and motivational patterns of average employees; to appraise supervisory patterns, personality traits, and other factors of importance as guides to future training programs.

Dr. Nelson described in detail his interviews with workers in plants, presenting tape recordings of what some of the men said in answer to questions. The workers had been invited to comment on drawings of men on typical jobs in fertilizer plants, and their observations, Dr. Nelson said, provided an index to their attitudes toward their jobs and their supervisors.

A thorough analysis of Dr. Nelson's study is expected to be undertaken later, it was indicated.

A luncheon meeting Oct. 18 set the stage for the final session of the meeting. Curtis A. Cox, newly elected general chairman of the Fertilizer Safety Section, presided, giving a brief talk on objectives set for the group during the coming year. The section expects to implement its three-year plan which comprises a training program.

Chairman Outlines The Big Job Ahead

Much has already been accomplished by the section during its five-year life, but a great deal remains yet to be done, the chairman pointed out. He threw out the challenge that unless the industry works endlessly to create an atmosphere of safety consciousness, all the other efforts are to no avail. "It is a matter of working with people," he said. "Humans don't react logically but they do react psychologically."

B. J. Phillips, safety director of Coronet Phosphate Co., Division of Smith-Douglass Co., Plant City, Fla., asked in his talk, "Is Safety First?" As in reply, he pointed out that too often safety takes a back seat to other considerations such as production and costs.

Mr. Phillips urged that actually, safety should be first in every consideration. "The most important thing in the world is the safety and well-being of a human being," he declared, and therefore, first things should come first.

He described something of the grief and heartache which accompany the news at home of a serious or fatal accident, and remarked that if top management could accompany the safety director on a sad errand of this type, safety would automatically come first in industry.

Several principles are involved in the success of a safety program. First, he said, is the sincere desire by management to have an effective safety program. "The attitude of management will be reflected down through supervision to every job," he said.

Another point is that participation must be so evident that no mistake can be made about the attitude of management. "There is a vast difference in the accomplishments of an accident control program in which management is visibly active and one in which there is a passive acceptance of the idea but no active participation readily apparent to the working force."

In order to prevent accidents, money must be spent in providing

Fertilizer Safety Group Elects Officers

CHICAGO—Curtis A. Cox, Virginia-Carolina Chemical Corp., Richmond, was elected general chairman of the Fertilizer Section of the National Safety Council at the group's meeting here Oct. 17-18. Mr. Cox succeeds Thomas J. Clarke, GLF, Ithaca, N.Y. Other officers named were: E. O. Burroughs, Jr., F. S. Royster Guano Co., Norfolk, Va., vice chairman, and R. G. Diserens, Phillips Chemical Co., Bartlesville, Okla., secretary. Four new members were named to the executive committee. They are: W. C. Creel, safety director of the State of North Carolina, Raleigh; Earl Day, Ark-Mo Plant Food Co., Inc., Corning, Ark.; Yen Shen, Taiwan Fertilizer Co., Ltd., Taiwan, China, and Stanley S. Schaefer, Farmco Service, Madison, Wis.

Reelected to board membership were E. J. Buhner, Buhner Fertilizer Co., Seymour, Ind.; George F. Deltz, Fertilizer Manufacturing Co-op., Baltimore, Md.; Dewee Lange, Lange Bros., St. Louis, Mo.; John S. Malk, American Nitrogen Co., Huntington, W. Va.; George L. Pelton, Smith Agricultural Co., Columbus, Ohio; Harwood T. Rice, Southwest Potash Corp., Carlsbad, N.M.; W. A. Stone, Wilson & Toomer, Jacksonville, Fla.; C. J. Watts, Jr., Atlanta, Ga., and Roy White, Lion Oil Co., Division of Monsanto Chemical Co., El Dorado, Ark.

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Pioneer Phosphate Co. Takes Over Fertilizer Plant in Des Moines

DES MOINES—Pioneer Phosphate Co. has taken over operations of a fertilizer plant here which uses sludge from the city sewage treatment plant as its principal ingredient. The plant had not been in operation for about a year.

A contract with the city calls for payment of \$1 a ton for the first 1,000 tons of city sludge used each year, \$1.50 a ton for the next 500 tons and \$2 a ton for the amount in excess of 1,500 tons.

Manager Named

ST. LOUIS—William F. Amon, Jr., St. Louis, has been named manager of new product development for the development department of Monsanto Chemical Co.'s Research and Engineering Division, it was announced here by Hal G. Johnson, Jr., development department director.

MEETING PLANNED

CORVALLIS, ORE.—The Oregon State Horticultural Society will meet Dec. 1-2 at Oregon State College, according to C. O. Rawlings, Oregon State College horticultural specialist.

pesticides, and urged the installation of dust collectors and other anti-dust equipment to prevent breathing toxic fumes.

The enforcement of safety rules was the subject discussed by Albert A. Waugh, safety supervisor, International Minerals & Chemicals Corp., Bartow, Fla. He indicated that it is absolutely necessary not only to have positive rules and regulations regarding safe practices in a plant, but also that adequate provisions must be made for enforcement at all times.

Final speaker on the program was D. Lydy, safety engineer of Goodrich-Gulf Chemicals, Inc., Port Neches, Texas. His talk on electrical hazards in fertilizer plants emphasized the urgent need for adequate wiring to handle heavy work loads brought about by modern machinery. The grounding of equipment, adequate fuses and maintenance were also emphasized by the speaker.

A brief question-and-answer period followed.

WINS INSPECTION

ST. LOUIS — Monsanto Chemical Co.'s plant at Texas City, Texas, ranked first in Group I (large plants) in the company's regular plant inspection competition.



UMBAUGH AIRLIFT—E. R. Kuck, head of the Brookside Research Laboratory, Inc., at New Knoxville, Ohio, shakes hands with Raymond E. Umbaugh, president of Umbaugh Agricultural Chemical Co., Memphis, just prior to welcoming the first of 5,000 farmers which the Umbaugh firm is flying in for tours of the laboratories. Looking on are Andrew Skapura, field service director for Brookside Laboratories, left, and Rudolph Ozolins, chief agronomist for the laboratories.

Umbaugh Farmer Airlift to Transport 5,000 for Research Laboratories Tour

NEW KNOXVILLE, OHIO—With their harvest completed, Midwest farmers are visiting this small Western Ohio village for a look at farm testing and for soil nutrition instruction.

The first group of more than 5,000 farmers which the Umbaugh Agricultural Chemical Co. of Memphis will send to New Knoxville already has taken a tour of the Brookside Research Laboratory, Inc.

The project, probably the world's greatest agricultural airlift, involved the Umbaugh firm and Brookside Farm Laboratories, headed by E. R. Kuck. An agreement covering the project recently was reached by Mr. Kuck and Ray Umbaugh, president of the chemical firm.

The laboratory is a private firm which makes scientific examinations of farm soil, water, livestock blood and feed. It operates in conjunction with Brookside Farm Laboratories

Assn., which about 1,500 farmers have joined to make use of the testing services.

In the soil test, samples are taken and a map made of the farm land. A report by the laboratory on tests shows deficiencies and makes recommendations for correction. Cost for the service includes \$10 fee for joining the association, \$1.25 per acre for soil analysis, with a minimum of 80 acres.

The laboratory services are used by the Umbaugh firm, which recently announced plans for the building of about \$10,000,000 worth of chemical plants at Walsenburg, Colo. (See page 1 of the Oct. 17 CROPLIFE.)

Farmers the Umbaugh firm flies to the laboratory see its facilities and operations in a one-day tour. Most of the farmers come from Ohio, Michigan, Indiana and Pennsylvania, a few from Illinois, Wisconsin and Kentucky.

guards, planning safe operating procedures and staffing a safety organization. "Experience has proved that every dollar intelligently spent in safety has returned big dividends," Mr. Phillips reminded. Thus, this type of spending should be given serious consideration.

The safety program is necessarily a part of the production process program, so the same executives charged with directing efficient production methods must be held responsible for administration of the safety program, he argued. The safety director should thus be placed on the same plane in the organization as other staff personnel, such as industrial relations, purchasing and engineering.

Management should also assume responsibility for development and training of the employees to meet the day-to-day safety requirements. "The human element is the cause of most accidents," the speaker reminded, and added that this problem is not new. While machines and materials can be controlled within close tolerances, men cannot. They do not react uniformly to the application of fundamental principles.

That workers' outlooks have changed markedly within the past 20 years was noted by Mr. Phillips. Workers now place human treatment and dignity slightly above financial incentives in industry, the speaker observed, and added that "happy workers are good producers and are usually actively interested in safety."

The Coronet safety director re-emphasized that "we have something to sell and that is safety." He said that while it is necessary to know the field in which one is working, of equal importance is the knowledge of how to handle people. This takes in a veritable public relations program in which people are made to see the reasonableness and need for safety rules.

Display Illustrates Machinery Safety

Duncan MacDonald, safety engineer of Anaconda Copper Mining Co., Anaconda, Mont., presented a display of miniature models of machinery usually found in fertilizer mixing plants and, using them as props, described the functions of guards over gears, pulleys and chains.

He said that most accidents are the direct result of human failure, and that many excuses against the use of guards are heard. Yet, machinery is responsible for 10% of accidents involving fatalities or permanent disabilities and for 25% of partial disability accidents.

Guards, he said, are effective in preventing human weakness from causing harm and should be able to keep any worker from hurting himself. To be effective, they must be substantial, must protect from hazards and at the same time not present new ones; they must not interfere with operation of machinery; must permit normal maintenance functions; must be removable; must not weaken the machine; and must be made of strong metal. When new equipment is purchased, it should be complete with guards already in place.

The subject of conveying devices was discussed by R. G. Diserens, safety director, Phillips Chemical Co., Bartlesville, Okla. He warned that as fertilizer plants increase production, conveyor equipment should keep pace via purchase of new units rather than overloading existing ones.

New equipment should be bought with an eye to its safety as well as its other properties. He urged that the fertilizer men look for guards,

walkways, pinch points, gears, sprockets and other points of potential trouble.

Mr. Diserens covered the subject of safety for maintenance men working on conveyors. He urged that the lock-out switch be placed in a position where the operator can see the entire length of the belt to make sure all is clear before turning on the power again. He discussed various methods of locking switch boxes to be absolutely sure the mechanism cannot start while men are working on it.

"Don'ts" of Conveyor Safety Outlined

A few "don'ts" were voiced by Mr. Diserens. Men must not be allowed to ride belts at any time, he said. They must not clean pulleys when machinery is running and they must not climb over a conveyor belt when it is moving.

Fred H. Courtenay, secretary of Federal Chemical Co., Louisville, Ky., in his talk on fire protection, told the group that one of the most frequent causes for fire in fertilizer plants comes through the use of heating units which get turned over and start blazes. Even though actual fire damage may be slight, he said, water can do about as much damage to fertilizer materials.

Faulty electrical wiring was named as one of the worst offenders in starting fires, with overheated motors listed as another serious cause. Plugged-in extension cords left overnight have been known to cause fires, too, he said.

The explosive properties of ammonium nitrate are not serious unless the material is confined such as in a ship's hold, he said. There have been many fires involving this material, but few explosions. However, it does give off oxygen when burning, thus intensifying the fire.

Organic matter, he said, is more likely to flash, explode or ignite spontaneously.

He recommended that fertilizer plant management cooperate with the local fire department. It would be a good idea, he added, for certain plant men to be trained in fire-fighting techniques and in rescue methods in order to act quickly and correctly in case of an emergency.

Safety problems involved in liquid nitrogen were covered by C. L. McDaniel, technical service supervisor, Lion Oil Co. Division, Monsanto Chemical Co., El Dorado, Ark. He said that safety with this material covers its transportation, storage and use. He urged companies handling this material to write various sources for information on safe handling practices.

These sources included the Bureau of Labor Standards, U.S. Department of Labor, Washington 25, D.C.; the National Safety Council, Chicago, for bulletins; the Compressed Gas Assn. for information on NH₃ and aqua ammonia, and the U.S. Department of Agriculture library for reprints of technical articles on the subject.

He explained the theory held by engineers that flash fires in TVA-type ammoniators are caused by use of 98% strength sulfuric acid rather than the 93%.

The use of second-hand steel tanks for storage of liquid nitrogen are a potential source of trouble, he warned. A number of explosions resulting from attempts to weld these tanks were reported by Mr. McDaniel.

A discussion of safety considerations in fertilizer-pesticide mixtures was carried out by Robert P. Henry, Willson Products, Inc., Reading, Pa. He described much of the protective equipment that should be worn by employees coming in contact with

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY
The regional circulation of this issue is concentrated in the Western states.

Atomic Energy: New Tool for Agriculture

Information on the peaceful use of atomic energy is much more plentiful now than it was just a few years ago, but there remains still some speculation as to the ways in which this new source of energy may be applied for the betterment of agriculture.

It is obvious, of course, that inexpensive electric power from nuclear reactors will have a sociological effect upon rural living, giving the farmer better conditions of work as well as modern conveniences and comforts even in remote places. But the big question is, how will agricultural production from the standpoints of both quantity and quality, be affected?

A recent survey by the Food and Agriculture Organization of the United Nations confirms earlier reports that radiation has no appreciable stimulating effect on plant growth, but at the same time, there are numerous ways in which farm output may be increased through this means.

One application, not particularly new, is the use of radioactive isotopes as tools in studies which lead to development of improved materials and methods for safeguarding crops. In the case of insect investigations, bugs have been tagged with radioisotopes to determine their flight range, migrating routes and overwintering habits.

In Canada, cobalt-60 has been used to label wireworms, making it possible to follow accurately their underground travels; and in the U.S. right now, forest insects are under investigations with isotopic markings to obtain data on their flight and overwintering habits for improved control.

Further data is badly needed on why some insects become resistant to pesticides. This problem is one of the most serious facing the industry, particularly in view of the limited tolerances for toxic residues on harvested crops. If resistant pests require greater quantities of a control material, how can a grower remain within the residue limits set for his crop?

Here, again, radioactive isotopes are helpful. Studies with insecticides labeled with a radioisotope, allow comparison of uptake and metabolism by normal insects as against those that have developed resistance. This work may be a step in determining the nature of resistance to the poisons. So far, about all we know is that both types of insects take up the toxicant alike, but they do not react the same.

Similarly, radioactive tags are playing an important part in the development of fungicides, insecticides and weed killers, for use either as direct applications or as systemic poisons. The latter are taken up by the plant without harm to it but are toxic to pests feeding on the plant. It is therefore important to know that such substances, when used, are not altered to products harmful to man or animals.

For instance, 2,4-D when used to kill weeds in the bean field, is readily absorbed by the bean plant also and has been found by the use of labeled material to be distributed throughout the plant together with at least two additional products derived from 2,4-D. It is obviously important in the case of edible plants to be able to trace such compounds and their metabolic products because of their possible effects on the consumer, animal or man. The use of radioactive labels is playing an important part in the development of safe materials and methods.

In the study of fertilizers and soil fertility, use of the isotope is also helpful. The FAO report points out that some of the most productive soils in the world were once rather poor and have been brought to their present capabilities by man's careful

tending. It emphasizes the effectiveness of added amounts of fertilizer and describes how the isotope may be employed to provide a wealth of fundamental information about plant nutrition and soil fertility.

The fact that phosphorus is largely retained by soils in forms not available to plants is one of the major concerns of soil scientists. The usual procedure for evaluating the contribution of a phosphorus fertilizer by comparing the total phosphorus absorbed by the plant from fertilized and unfertilized plots could be misleading, FAO says.

"Before the use of tagged material, it was thought that the increasing uptake from the fertilized plot all came from the fertilizer. Through the use of radioactive phosphorus, it has been found that when the fertilizer is applied, the plant takes up additional phosphorus from the soil itself as well as from the added nutrient."

Experiments are under way with rice, the basic food of nearly half of the world's population. Radioisotopes of phosphorus, iron and sulphur are being employed in preliminary investigations of the chemistry of submerged soils. Similar work is being carried out to determine the most economic source of specific nutrients and the best placement and time of application of fertilizers, particularly in relation to the growth period when the plant can best use them and their placing in relation to the main feeding zones of the roots. All of these tests lend themselves to the use of traceable radioactive isotopes.

Studies in plant nutrition and metabolism are also under way using isotopes as a valuable tool. This involves the translocation of various toxicants throughout the plant and the resultant reaction to plant hormones and chemicals with herbicidal properties.

Radioisotopes have been particularly helpful in demonstrating that some plants can absorb such nutrients efficiently through the foliage and that nutrients so absorbed are rapidly translocated throughout the plant. This principle is already being used in the application of foliar fertilizer.

Additional information on the absorption and translocation of such substances is needed and through the use of urea labeled with carbon-14 it has already been found that crops differ markedly in their ability to utilize this compound. Cucumbers, for instance, use it more than four times as fast as do cherries and potatoes. In the case of strawberries, calcium is readily absorbed, but it has been found that it is not translocated into daughter plants and hence foliar feeding as a major source of calcium is not adequate in the case of this plant.

So here you have a partial view of how the application to agriculture of knowledge in the field of atomic energy may be beneficial to many people. It is by no means a cure-all, but it does hold promise of contributing in many ways to man's oldest industry.

Quote

"Our people are concerned over the possibility of being wiped out in an atomic war, but they ignore a more real danger. The men in the Kremlin do not need to drop atomic bombs upon us; they are doing very well without them—by infiltration and subversion; by increasing their scientific manpower for the long pull while we waste ours. Instead of meeting their strategy with a better one, we allow ourselves to be diverted by all sorts of minor matters. If we are not smart enough to discern the real dangers and meet them effectively, then we shall not be saved and shall not be worth saving."—Joel H. Hildebrand, president, American Chemical Society, in recent address at ACS National meeting.



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MEETING MEMOS

Oct. 25-26—Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Oct. 26-28—Mississippi Fertilizer Conference, Buena Vista Hotel, Biloxi, Miss.

Oct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

Oct. 31—Nebraska Fertilizer Institute, Inc., First Annual Convention, Cornhusker Hotel, Lincoln, Howard W. Elm, Executive Secretary, 917 Trust Bldg., Lincoln 8, Neb.

Oct. 31-Nov. 3—United Kingdom National Crop Protection Conference, Eastbourne, England.

Nov. 1-4—Ohio Regional Lime & Fertilizer Conferences, at Wilmington Nov. 1, Findlay Nov. 2, McConnellsville Nov. 3 and Cadiz Nov. 4.

Nov. 2-3—Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 2-5—Third annual Mid-Atlantic Farm and Home Show, Convention Hall, Atlantic City, N.J.; William A. Haffert, Jr., Sea Isle City, N.J., executive vice president.

Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers University, New Brunswick, N.J., secretary.

Nov. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C.; Anton L. Foster, International Minerals & Chemical Corp., General Chairman.

Nov. 6-8—California Fertilizer Assn., Thirty-second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary and Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 8-10—17th Annual New York State Insecticide, Fungicide and Application Equipment Conferences; Bibbins Hall, G.L.F. Exchange, Ithaca, N.Y.; O. E. Palm, Cornell University, Ithaca.

Nov. 9—Soils School for Fertilizer and Lime Dealers, Lipman Hall, Rutgers University, New Brunswick, N.J.

Nov. 9-10—Oregon Weed Conference, Senator Hotel, Salem, Rex Warren, Oregon State College, Conference Secretary.

Nov. 11-13—Texas Aerial Applicators Assn., Annual Convention, Corpus Christi, Texas.

Nov. 16—Pesticide Dealers Conference, Rutgers University, New Brunswick.

Nov. 16-17—Ohio Pesticide Institute's Ninth Annual School and Conference, Ft. Hayes Hotel, Columbus, Ohio. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.

Nov. 18—Arkansas Fertilizer School, Little Rock.

Nov. 22—Manufacturing Chemists' Assn., Semi-Annual Meeting and Winter Conference, Statler Hotel, New York.

Nov. 29-30—Land Use Forum, Kansas State College, Manhattan, Kansas, Dr. R. V. Olson, Kansas State College, Chairman, Arrangements Committee.

Nov. 29-30—Oklahoma Plant Food Educational Society, Inc., Memorial Union Bldg. Oklahoma A&M College, Stillwater.

Nov. 29-Dec. 2—Entomological So-

cety of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 2—South Dakota Fertilizer Dealers Short Course, South Dakota State College, College Station.

Dec. 5—Soils & Fertilizer Short Course, Institute of Agriculture, University of Minnesota, St. Paul Campus.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Dec. 8-9—Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30—American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

Dec. 29—Symposium on Health Hazards of Chemicals, before the Pharmacy Section at Annual Meeting of American Association for the Advancement of Science, Atlanta.

1956

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 10-11—Eighth Annual North Carolina Pesticide School, North Carolina State College, Raleigh.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Henning, Albuquerque, Secretary.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 26-29—Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton States Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga. W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9—National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting, Hollywood Beach Hotel, Hollywood, Fla., Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

Nopco Schedules Management Forums

HARRISON, N.J. — Eight forum meetings dealing with production, personnel relations, plant safety and other problems relating to management have been planned during the coming months by the Nopco Chemical Co. Nopco supervisory employees, from foremen to top executives, have been invited to attend the dinner meetings, to be held at the Military Park Hotel in Newark, N.J.

The series commenced on Oct. 18 with a speech by Nopco's president, Ralph Wechsler. Mr. Wechsler spoke on Nopco's plans for future expansion.

Speakers from the company will alternate with outside speakers at the meetings. Speakers already engaged are A. Lateiner, professor of personnel relations at City College of New York, and B. G. Staples, who is in charge of courses in the handling and use of glass-lined equipment for the Pfaunder Co. of Rochester, N.Y.

INDEX OF ADVERTISERS

Abrasion & Corrosion Engineering Co.	Larvacide Products, Inc.
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Bagpak Div., International Paper Co.	
Baker, H. J., & Bro.	Naugatuck Chemical Div., U. S. Rubber Co.
Baughman Manufacturing Co., Inc.	Nelson, Edward S., Ltd.
Bealrd, J. B., Co.	Niagara Chemical Division, Food Machinery and Chemical Corp.
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Blue, John, Co.	Northern Chemical Industries
Bradley & Baker	
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Burrows Equipment Co.	
Butler Manufacturing Co.	
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Carlisle, J. C., & Associates	Pfizer, Chas., & Co., Inc.
Chase Bag Co.	Phelps-Dodge Refining Corp.
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Clover Chemical Co.	Potash Company of America
Commercial Solvents Corp.	Poulsen Company
	Powell, John, & Co., Inc.
Deere & Co., Grand River Chem. Div.	Private Brands, Inc.
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	Shell Chemical Corp.
Fairfield Chemical Division, Food Machinery and Chemical Corp.	Smith-Rowland Co., Inc.
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Flint Steel Corporation	Specifide, Inc.
Florida Company	Spencer Chemical Co.
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	Stoker, H. S., Co.
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General Chemical Division, Allied Chemical & Dye Corp.	Thompson-Hayward Chemical Co.
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Grand River Chemical Div., Deere & Co.	Union Bag and Paper Corp.
	United Petroleum Gas Co.
Hahn, Inc.	U. S. Phosphoric Products Division, Tennessee Corp.
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Highway Equipment Co.	
Hypre Engineering, Inc.	
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1

NEWSPAPER



Serving the Agricultural Chemical Industry ...

Croplife is the weekly *newspaper* for all phases of the industry from the manufacturers of basic chemicals down the production and distribution chain through the retail dealers. Croplife reaches *all* the key men in the industry. These groups are reading Croplife:

- Fertilizer manufacturers, mixers and suppliers of fertilizer ingredients
- Formulators of Pesticides, Herbicides and other Farm Chemicals
- Retail Dealers selling fertilizer, farm chemicals and other farm supplies; Custom Sprayers, Pest Control Operators, and Nurserymen
- Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

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